Epidemic Skin Disease

SAVILL.

L. Savill's case of

ON AN

EPIDEMIC SKIN DISEASE,

RESEMBLING ECZEMA AND PITYRIASIS RUBRA

IN SOME RESPECTS,

WHICH OCCURRED CHIEFLY IN THE WESTERN DISTRICT OF LONDON DURING THE SUMMER AND AUTUMN OF 1891.

A Paper originally Read before the Medical Society of London, November 30th, 1891,

AND

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BY

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DESCRIPTION OF COLOURED PLATE AND PHOTOTYPE 5.

Case F. XXI.—Maria T———, æt. 68, the subject of our coloured illustration, *naturally a thin woman*, was admitted to II. ward on October 29th, 1890, for an eczematous ulcer of the left leg. The patient had formerly had "eczema," and six years before, an attack of erysipelas, followed by abscesses and loss of hair. The ulcer took nearly a year to heal; and it left a patch of chronic eczema on the left leg and thigh, which persisted until after the epidemic attack, *and then disappeared.*

On August 6th the epidemic malady started as a *clearly defined oval ring under the chin, perfectly clear in the centre, red and raised at the margin*, size of half-a-crown. This, after spreading a little, faded away in the course of a week. Then the eruption *broke out with redoubled vigour* on the forehead and rapidly spread. This time the eruption took the form of discrete papules, such as are seen on the chest in the plate, and vesicles. The coloured plate is intended to show the swelling of the skin round the neck and eyelids, so great that the latter could not be opened. This swelling is seen better in the photograph (phototype 5) of the same patient. The whole body was attacked, sooner or later, but the arms and face were always the worst, and here the swelling and thickening were very great, and the exudation considerable. The face at one time was half again as big as natural. The primary attack lasted 6½ weeks, and was followed by a slight relapse. The temperature varied between 97° and 99°; once it reached 100° when the swelling was at its height. The anorexia and asthenia were marked, at one time recovery being despaired of; there was some albuminuria, and the rash was followed by general wasting, alopecia, and leucoderma. *The initial patch beneath the chin is still marked by a white area, which contrasts strongly with the natural colour of the skin around.*

CONTENTS AND SYNOPSIS.

The phototypes have been produced by the Woodbury process from negatives of my own, taken with an old-fashioned Baker's lens.

ON AN EPIDEMIC SKIN DISEASE,

Somewhat resembling Eczema and Pityriasis Rubra, which occurred chiefly in the Western District of London during the Summer and Autumn of 1891.

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All the cases of this disease which came to my knowledge occurred in the Western division of the Metropolis, excepting those in the Lambeth Infirmary, which is situated in the S.E. district. The following remarks are based on the 165 cases under my own care. On the whole, these seem to have been the most severe, and attended by the highest death-rate. Since I first drew attention to this disease in the *Lancet* of August 1st, 1891, several similar outbreaks have, on enquiry, been discovered in other institutions,* not only this year (1891), but also in previous years, and a good number of sporadic cases.†

Out of an average of 400 or 500 patients in the Infirmary and Sick-Wards of the workhouse, it is rarely that we are quite without some half-a-dozen cases of more or less localized eczema. Not unfrequently cases of acute general eczema come in; and occasionally a case of pityriasis rubra is admitted. Such cases are specially liable to occur in the autumn, so far as my memory serves me; but never before have we had a collection of cases of skin disease at all approaching the present one. Out of 846 (376 m. and 470 f.) patients who passed under treatment in the Infirmary and workhouse Sick-Wards between July 1st and October 31st, 1891, 163 (89 m. and 74 f.), or 19·2 per cent. have been attacked with the malady

* Mr. Hutchinson narrates an interesting epidemic which occurred in the Greenock Parochial Asylum, under the care of Dr. Frank A. Elkins, as far back as 1888 (*Archives of Surgery*, January, 1892, p. 223). About fifty patients had the eruption, and about twelve died. Some of the most robust attendants suffered, as well as the doctor himself.

† Particulars of the cases at Paddington and at other places will be found at the end.

I am about to describe. At first I took the disease to be acute general eczema; but as week by week fresh cases occurred I was struck by the differences which will be mentioned hereafter. Some had the disease very trivially, but most had quite half the surface of their bodies affected, and many were entirely covered with it. In a few it scarcely interfered with their usual health; but in most, the irritation of the skin and the concurrent constitutional disturbance rendered their condition a most unhappy one.

It may be mentioned that the disease broke out not only in many different wards at the same time, but also in two buildings which are totally distinct.* The cases were pretty evenly distributed in both buildings, excepting in the nursery and childrens' ward, which contained very few cases, and those chiefly among the adult patients who happened to be there at the time. In the Infirmary 6 cases broke out in I ward (containing chiefly children), 11 in II ward, 14 in III ward, 2 in IV ward, all female wards; 17 in V ward, 18 in VI ward, 17 in VII ward, and 4 in VIII ward, all male wards; IV and VIII wards were closed soon after the epidemic started.

Amongst the paid staff of both places there was remarkable immunity, the only persons attacked being myself and a housemaid. These are not included in the tabular statements. 151 of the 163 cases were patients under treatment for some other disease at the time the eruption attacked them. Only one patient (M. LVI.) was brought in with the skin affection, at a date when many other patients were already affected. Only five male and six female cases occurred amongst the inmates of the workhouse proper.

Illustrative Case.

First of all, I will give an account of a case which may be regarded as fairly typical; and then conclude with some general remarks, founded on the analysis of the cases.

* The two buildings are the New Paddington Infirmary and the Old Workhouse Sick-Wards. They stand on adjacent grounds, separated by a wall only. The New Paddington Infirmary, like the Marylebone Infirmary, where a similar outbreak occurred at the same time, is a modern building replete with every modern sanitary improvement. The old Sick-Wards of the workhouse are a part of the workhouse, and governed by the master, quite distinct from the Infirmary. The staffs of the two places are totally separate, and the buildings are separate institutions. The only points they have in common are the medical staff, who have charge of both institutions, and the Board of Guardians, which governs both.

Some of the earlier cases occurred in No. VI ward of the Infirmary, and the fourth to be attacked in this ward was Joseph D——, a shoemaker, æt. 63. It so happened that the patient in the next bed (M. VI.)* had been affected nine days previously. It also happened that the next victim was in an adjacent bed on the other side of him, and the fourth in the next bed, the number of their beds in order being 12, 11, 10, 13. It may be mentioned that only thirteen out of the thirty-two patients in this ward escaped the disease.

D—— is a little man, measuring only four feet five inches high, and weighing only six stone, the subject of spinal curvature, though in general he enjoys good health. There is no history of rheumatism, gout, phthisis, or other disease in his family; but he himself had suffered, he told us, from occasional slight attacks of "rheumatism" for forty years, and it was for a subacute attack of this disease he was admitted. He had never had any kind of skin disease in his life before, and his skin had always been, to use his own expression, "particularly fair and pale, though inclined to be dry."

He was admitted on March 13th, 1891, with pain, swelling, and other symptoms pointing to rheumatic inflammation of some of the joints and fasciæ of the right arm and leg. Without entering into detail, it may be said that it was evidently rheumatism and not gout from which he suffered; and the inference was that the attacks from which he had suffered on former occasions, which he said were of exactly a similar kind, were also rheumatism. Guaiacum was prescribed for him, blisters applied to his shoulder, and he gradually improved. By the end of June he was quite well, getting up and about every day. His discharge from the infirmary was in contemplation, when (on July 4th) he complained to the ward-sister of considerable "irritation" of his skin, especially on the arm. There was nothing to be seen at that time, but the next day a fine papular rash was observed on the front of the right forearm and upper arm. The rash came out as a thickly set papular one with some general congestion and thickening of the skin.† By the sixth day (July 10th) the eruption had spread to the face and head. Next day fresh independent patches of the disease had occurred on the palms, the left elbow back and front, and also on front of the legs, a point still more distant from the place first

* These are the reference numbers to the cases, notes of which are open to inspection.

† The same condition is well shown in phototype 3.

attacked; meantime, the parts originally attacked underwent improvement. It was never vesicular, but the epidermis was soon shed as small dry scales, or in larger flakes from the hands and feet.

The eruption took a turn for the better about the tenth day, and it was thought to be getting well; but about the fourteenth day there was a severe general exacerbation. The eruption was now symmetrical and noted (July 17th) as "very burning and irritating, and preventing sleep. Back covered almost uniformly with papular eruption which is going on to furfuraceous desquamation. Arms and legs covered with spots of same, also hands up to fingers' ends, back and front. Face and most of scalp (both bald and hairy parts) uniformly reddened and thickened (not papular) and desquamating in small scales. Ears worst part of all, and weeping."

The only place where vesicles were observed in this case was behind the ears; elsewhere, the vesicular stage, if it existed at all, escaped notice.

By the twenty-first day nearly the whole of the body and limbs were affected, and presented the appearance of a crimson surface formed of inflamed and swollen skin, gradually being denuded of its epidermis, which separated in scales and flakes of various sizes, and presented here and there, especially in the flexures of the joints, cracks through which a scanty moisture exuded; but otherwise, and for the most part, the inflamed skin was dry, and burning hot.

The conjunctivæ were inflamed, and discharged a sero-purulent fluid; and a sickening odour was given off from the skin.

Matters remained in this pitiable state for several days. The skin was raw and acutely tender to the touch, so that the patient dare not relieve the intolerable itching and burning from which he suffered, and the mere contact of the bedclothes was painful. About the twenty-fifth day of the eruption, the swelling began to abate, but the redness and desquamation still continued for some weeks longer. On August 12th the following note was made:—"Eyelids much thickened—eyes red and watering. Whole surface of body reddened, and scaling in moderate-sized scales." Mr. Jonathan Hutchinson saw the patient about this time, in the sixth week of the disease, and expressed the opinion that it would be "difficult to distinguish the case at that stage from one of pityriasis rubra; the universal desquamative dermatitis was exactly such as occurred in that disase."

About the seventh week the new skin gradually assumed a yellowish-brown colour, and an appearance of being stretched and dry, like parchment. In the face this stretching gave rise to eversion of the eyelids. This stage lasted a considerable time, and it was not until the eighth or ninth week that the skin began to revert to its normal condition, though still somewhat scurfy.

During the whole time the patient suffered from extreme weakness and prostration; at one time he experienced a feeling as of falling through the bed. The tongue, at first coated, afterwards became raw and sore, like the skin. The loss of appetite was very marked, almost amounting to a loathing of food. He sometimes felt sick, though he never vomited, and he had no diarrhœa. The weakness lasted long (several weeks) after the dermal inflammation had abated, but return of the appetite was the first sign of improvement, and it became as ravenous as a patient recovering from typhoid fever. The temperature taken regularly throughout was very little if at all elevated, going up to 99° on some evenings. The urine, which was normal on admission, presented a trace of albumen on several occasions. It first appeared in the fourth week of the disease (July 28th) and lasted continuously for six or seven weeks after recovery, to October 6th, when it disappeared. Concurrently with this there was anasarca of the legs.

The primary attack of the disease may be said to have lasted about eight weeks altogether. The eruption was followed on two occasions by trivial localized relapses, viz., two weeks later (Sept. 17th) on the arms and chest, and eight weeks later (October 23rd) on the legs. Three weeks after the rash had faded he had a slight attack of pleurisy.

The marked abatement of the eruption during the second week in this case is a feature worthy of attention. A similar abatement, followed by an exacerbation of redoubled violence has occurred at an early stage in many of the cases.

In this patient the eruption was followed by a chocolate-coloured pigmentation uniformly spread over the whole body.* The nails were shed, and the hair of the scalp came out, so that he became completely bald.

Treatment was unavailing in this case. Warm soda baths every

* The patient was shown before the Medical Society on November 30th, and still presented the pigmentation.

other day relieved the burning sensation when the eruption was at its height, and soothing lotions seemed to allay the inflammation to some extent.*

Definition.

This case may be regarded as a fairly typical one. All the 163 cases, though differing considerably in detail, bear a strong general resemblance to each other; and whatever may be the explanation of the epidemic, it will, I doubt not, be conceded, by the many gentlemen who have seen the cases, that they are all examples of one disease, one pathological entity, though they presented differences amongst themselves both of kind and severity, just as do cases of localized eczema, varicella, and measles.

As a descriptive definition of the disease the following seems to include all the cases I have seen:—A contagious malady in which the main lesion is a dermatitis, sometimes attended by the formation of vesicles, always resulting in desquamation of the cuticle; usually accompanied by a certain amount of constitutional disturbance, and running a more or less definite course of seven or eight weeks.

The Skin Lesion.

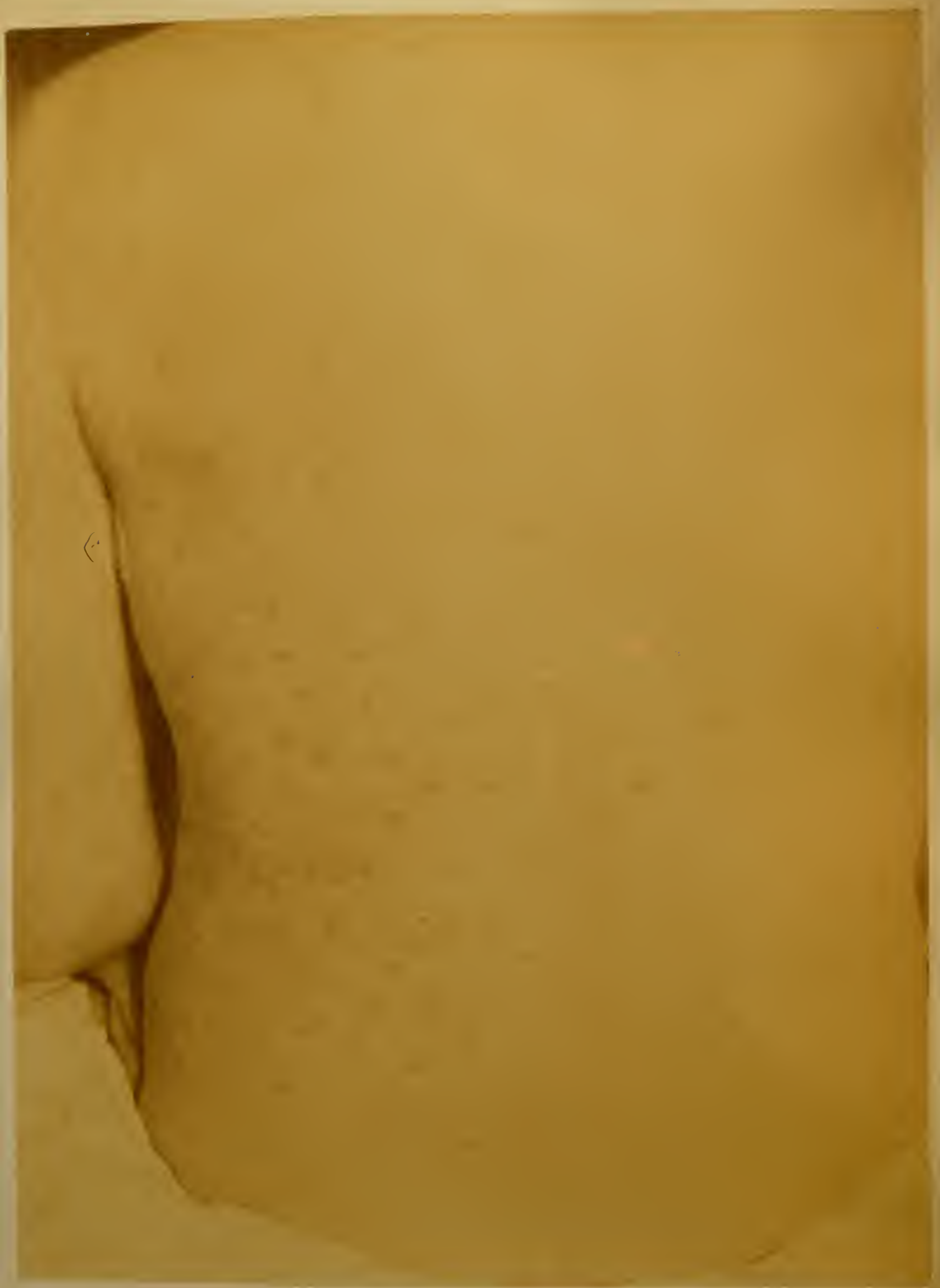
For purposes of description, the eruption is best divided into three stages:—

1. *Papulo-erythematous stage* (lasting three to eight days).

(*a*) The eruption frequently commenced as a discrete papular rash. Nearly all the serious cases began as an erythemato-papular rash, by which I mean a congested surface on which numerous small shotty papular elevations could be seen or, even better, felt (Phototype 3). There was generally considerable induration and thickening, and in parts where the cellular tissue was loose, œdema (Phototype 5). It faded away towards the margin, and terminated sometimes with and sometimes without an abrupt raised edge, beyond which a few scattered papules could be seen.

(*b*) Another mode of commencement (14 cases out of 163, 8 males, and 6 females) was with slightly raised blotches of congestion, having

* On March 10th, 1892, four months after complete recovery, D—— experienced considerable irritation of the skin without visible signs, and the next day a universal fine papular rash appeared; but creolin baths morning and evening for some days cut the attack short.



PHOTOGRAPH 3.

Case M., LIV.—Three days after starting. Shows *Papulo-Erythematous stage.* Usual mode of commencement (best seen below and to left.)

an abrupt margin and circular outline (like Erythema nodosum, or E. papulatum).

(*c*) Six of the cases commenced with one or more small flat papules which, as each enlarged, presented an appearance much resembling ringworm of the body; *i.e.*, a circular spreading ring of congestion enclosing a depressed area covered by minute vesicles (Phototype 4 of O'G——). The importance of these cases will be further alluded to.

About the second or third day, in the moist type of cases vesicles developed, though they could rarely be seen intact, for they were so easily broken; if they remained whole, their contents became cloudy as usual. In one case, where the vesicles were of unusual size, I was fortunate enough to procure some of the contents of an unbroken one for bacteriological research.

2. *Stage of exudation or desquamation* (lasting three to eight weeks). Whether vesicles were formed or not, and whether the rash began as papules or maculæ, they soon became confluent, and then presented the appearance of a crimson surface of thickened and indurated skin (Phototype 5), continually shedding its cuticle, in scales or flakes of various size, mingled sometimes with dried exudation (Phototype 6).

From the presence or absence of exudation these cases may be grouped into two varieties. In one, the "moist" type, the papules were followed by vesicles and copious exudation; while in the other, the "dry" type, there was no exudative stage, or, if so, it was very transient, the skin remaining to all appearances dry throughout the course of the disease. The former of these, the "moist" type, bore a strong superficial resemblance to acute eczema, the latter to pityriasis rubra. About two-thirds of the cases were classed as the "moist" or Eczematous type. There were very few pronounced cases which did not at some period of their history exhibit slight moisture either in the flexures of the joints, or behind the ears.

The skin remained in this crimson inflamed condition for several days or several weeks, continually shedding its epidermis, not once or twice only, but many times (Phototype 6). The size of these flakes varied considerably, from impalpable powder to the entire cast of a hand (fig. 2). *There was not a single case in which this exfoliation was absent*; and in some cases two or three pints of scales could be collected in twenty-four hours.

3. *Stage of Subsidence.*—By degrees the inflammation subsided, leaving the skin still thickened, indurated, but with a polished,

brown appearance. In many cases the new skin presented a raw, parchment-like appearance, smooth and shiny, sometimes with cracks here and there, not unlike Ichthyosis vera. In the face this dragging of the skin resulted in an eversion of the eyelids (Phototype 7).

In many of the cases the skin assumed a purpuric condition beneath the other elements of the eruption. This occurred, for the most part, in the later stage of the disease, and among the aged. I have frequently noticed, independently of this epidemic, that eruptions in old people are very prone to become complicated in this way, probably owing to the usually diseased state of their vessels. In some the eruption had this character throughout its course (fig. 1).

Parts first attacked.—The rash commenced always as a small patch of varying size, which developed, spread, and sometimes faded independently of others elsewhere. The following table, A, shows the relative frequency with which the various parts of the body were first attacked :—

TABLE A.—SHOWING THE FREQUENCY WITH WHICH VARIOUS PARTS OF THE BODY WERE FIRST AFFECTED.

	Male Cases.	Female Cases.	Total Cases.	Percentage
Arms and Forearms	25	12	37	22·6
Face and Scalp	15	20	35	21·4
Feet and Legs (below knee)	11	13	24	14·7
Hands	15	7	22	13·4
Back	8	5	13	7·9
Neck	3	9	12	7·3
Chest or Abdomen	7	5	12	7·3
Ears	3	2	5	3·0
Thighs and groins	2	2	4	2·4

Mode of Spread and Distribution.—Inasmuch as all parts of the body were not simultaneously attacked, it follows that different places often presented different stages of the eruption. The rash seemed prone to start and predominate in the folds of the skin, such as the flexures of joints, beneath the mammæ, behind the ears, etc.

Epidemic Skin Disease (Savill.)

Phototype. 4.

Case. F. XXVIII. – Patch on right ankle started as a papule three days ago. Shows the ringed character which the eruption sometimes assumes: resembling ringworm.

In exactly half of the cases the entire body was covered with the eruption sooner or later. But in other cases the disease was limited to patches of varying size; and in such, the extreme thickening of the affected skin was more obvious by comparison with the healthy intervening tracts. In some of the younger cases the rash was extremely trivial, and might have come under the heading Eczema. It sometimes required great care to exclude all such sources of error, and if the disease I am now describing has existed before, it is more than probable that slighter instances of it have been classed as Eczema, and severer cases as Pityriasis rubra.

I was much concerned to discover whether the march of the skin affection took place by spreading from contiguous parts, or whether it ever appeared simultaneously in two distant and wholly unconnected places. In this way I hoped to decide the question whether the disease was due to a purely local influence creeping along the skin, and producing secondary general effects, or, on the other hand, to some general poison in the blood, or perhaps, to some general nervous influence which, selecting the tegumentary tissues for its evil effect, acted on one or more distant parts of the skin at the same moment.

Certainly, in the majority of cases, the spread took place from neighbouring parts, or such as might have been brought into contact by the movements of the patient or the bedclothes. Not a single clear illustration of the opposite method came under my notice which would stand the test of minute and critical investigation. In some instances, what appeared to be a simultaneous involvement of two distant and distinct parts was not really simultaneous. In others, the parts affected might easily have been in contact with each other, like the inner surfaces of the two thighs, or with the same part of the bedclothes, like the hands and face. And others, again, were shown, on investigation, to have been previously the seat of the rash, which had subsided only for a time. Such was the fallacy into which I was nearly led in the case of the man, M. LXXXIX. The rash came out on Oct. 10th, and apparently remained localized to his arm and back. Thirty-six days later a very sudden and severe outbreak occurred, all at once, in the course of the night of Nov. 14th, over the whole of his body and limbs, many fresh parts, distant from each other, being involved at the same moment. But I found, on inquiry, that all these parts had, at one time or another, been

previously involved, and, therefore, they had now only taken on fresh action all together.

Nothing was commoner than for the eruption to begin slightly, and, in the course of a few days, to fade away as though the attack were going to abort; then, to take on fresh activity and progress with redoubled vigour. It was so in the case I first narrated, and in many others.

We have seen that the rash started most frequently on the upper extremities and face; and, in a large majority, it spread from above downwards, the feet being involved last.

A definite tendency to symmetry was to be observed in a great many of the cases—at any rate, after the first, or "false start," was over. At the very beginning this symmetry of distribution by no means always existed—thus, M. XXX. started from several isolated and asymmetrical centres; but, at a later period, a symmetrical involvement of parts was often very marked.

The other epidermal structures—hair and nails—shared in the disease in its later stages. In the alopecia, no part of the body was spared; eyebrows, eyelids, pubic hair, all came out. Nor did it necessarily follow that these parts had previously shown evidences of the eruption, for in some cases, *e.g.*, F. XLVIII., there was no rash seen on the head (though carefully looked for), yet her hair afterwards came out; just as in another case the palms of the hands and fingers escaped all evidences of the rash, but subsequently the epidermis was shed in large flakes.

Constitutional and Subjective Symptoms.

Constitutional symptoms of some kind were present in nearly every case, though they were very slight in some. They seemed, as a rule, to bear some general relation to the extent and severity of the skin lesion, but not always. Two symptoms, anorexia and prostration, were by far the most constant. Weakness or a feeling of exhaustion and loss of appetite in a few cases preceded the rash by a few days (*see* also p. 28), and in nearly all the weakness lasted for a considerable time afterwards. In the severer cases it was very pronounced, and tended more than anything else to bring about a fatal issue.

In several cases the rash was of moderate dimensions, but the

asthenia was very great, and lasted for weeks after the other had gone. In the marked cases great thirst was also a notable feature, It is necessary to repeat that the cases differed widely in point of severity; certainly in the slighter cases the constitutional symptoms were of a trivial order, and might by a casual observer have been overlooked; but one or more of the three symptoms—anorexia, asthenia, or thirst—were always present. Desquamation of the epidermis occurring with one of these three symptoms, in the absence of pyrexia, and the possibility of scarlatina being excluded, would almost suffice to identify the disease.

The temperature during the earlier period of the eruption was generally normal, or, in many of the older patients, subnormal. In the later stages, when the skin became extensively or severely inflamed it went up to 99° or sometimes 100° in the evening, and generally down again to normal in the morning. A higher temperature than this usually indicated the formation of boils or some other local inflammation.

The most typical chart is a long course of intermitting apyrexia, by which is meant about 97° or 98° in the morning and about normal in the evening; with here and there a rise to 100° or 102°, lasting a day or two. The explanation of these occasional rises of temperature was not always apparent. In many cases they were due to boils or other local inflammations, but in some cases no such foci could be detected. The pyrexia might amount to 102° and last for two or three days. The rise and fall were nearly always sudden, and much resembled the rise and fall in a surgical case when the outlet for pus is suddenly stopped and afterwards made free. In all the fatal cases but one the temperature gradually fell below normal and remained so for several days before the end. This might be accounted for by the profound collapse. In one case (M. XIV.) the temperature rose gradually during the last seven days of life to 101°.

Subjective symptoms.—These consisted of severe itching, irritation, and a feeling of burning pain. In the worst cases the condition of the patient was truly pitiable; after loss of the epidermis the skin was very sore and tender to the touch, so that the weight of the bedclothes could scarcely be borne. The sour odour exhaled from the severe cases (quite half the number) attracted everyone's notice.

Sleeplessness was common. In most cases this was quite accounted for by the intense irritation of the skin, which was always worse at

night; but in some (*e.g.* M. XXXI. æt. 40) it was evidently due to an intense irritability of the nervous system.

Course, and Mode of Fatal Termination.

Course.—The disease began and ended gradually, so that it was sometimes a little difficult to fix an exact date for either. This was more true of the ending than of the commencement. Very often the eruption was preceded for a few days by a sensation of irritation or tingling of the skin, unaccompanied by any visible signs. Sometimes it was preceded for a few days by a feeling of malaise and loss of appetite (*e.g.*, cases M. XXVII. and M. XXXVIII. (*see* also p. 28)).

The termination in all cases was by lysis. Taking the end to occur when the primary or principal attack was over, the average duration amongst the males was 7·24 weeks, females 7·32 weeks, and in all cases 7·27 weeks.

Recrudescence, or relapse, was a common feature in the epidemic; it occurred in fifty-two of the patients; twenty-eight had one relapse, twelve had two relapses, and ten had three or more. One patient (M. XXII.) had nine relapses, and one (M. LXIV.) had ten. It is interesting to note that both of these patients continued to relapse until the termination of the epidemic; suggesting the idea that the termination of the disease in them depended on a disappearance of the poison from the air around, rather than the exhaustion of a pabulum within them.

Mode of termination.—Several of the cases got quite rid of the eruption, but did not recover from the weakness, of which they finally died. Among the constitutional symptoms were two, referable to the *nervous system,* which are worthy of special mention as occurring only in the severer cases; viz., twitching of the muscles, or "subsultus tendinum," as it is sometimes called, and shallow, sighing respiration without other signs of pulmonary mischief. These symptoms, either separately or together, were of the gravest import: all the eighteen fatal cases presented one or other. They died in much the same manner. The weakness became profound, and was succeeded by drowsiness; the patient, however, generally retained consciousness till within twenty-four or forty-eight hours of death. Gradually the drowsiness deepened into coma, which, without the supervention of convulsions (excepting one case, M. LX.),

PHOTOGRAPH 5.

Case F., XXI. (naturally a thin faced woman).—Three weeks from real start. Shows swelling of arms and face. Same case as colored plate.

terminated the scene. The chief feature of the mental condition towards the end of life was torpor ; only a few had nocturnal delirium. The patient could be roused to answer questions, but dropped off to sleep immediately.

Symptoms referable to other Organs.

Alimentary Tract.—After the eruption and prostration, the total loss of appetite was undoubtedly the most pronounced symptom in nearly all. The positive loathing of food which often existed concurrently with the rash, was only equalled by the ravenous appetite which followed with convalescence.

The tongue at first was covered with a thick fur, but generally this coat came off and left a raw red surface during the remaining weeks of the disease, the patients bitterly complaining of its soreness. In severe cases it became dry, the saliva thick and viscid, and sordes collected round the teeth. The appearance of the tongue was quite analogous to the skin changes, and the suggestion was irresistible, in some cases at least, that the epithelium of the alimentary canal shared in the lesion of the skin ;—in other words, the poison exhibited a proclivity for epiblastic tissues.

Diarrhœa occurred at some time in the course of the disease in ten cases, *vomiting* in eight, and eleven had both vomiting and diarrhœa, out of eighty cases in which sufficently detailed notes were made on this point. Diarrhœa or vomiting occurred chiefly in connection with those cases that appeared during the later months of the epidemic. It is interesting to note the incidence of these symptoms on different sexes. Out of 56 males, 7 had vomiting, 7 had diarrhœa, and 7 had both. But, out of 24 females, only 1 had vomiting, 3 had diarrhœa, and 4 had both.

These symptoms did not occur at any constant period in the course of the disease. In some (*e.g.*, M. XXXVI., M. LXXIX.), one or other, or both of these symptoms came on several days before the appearance of the eruption ; in others they happened when the skin lesion was at its height ; while in many they occurred during convalescence, when the skin was clearing, or even when it had quite recovered. It was the uncontrollable vomiting and diarrhœa which indirectly brought about the fatal termination in case M. XXV. In this and

some other instances there was incontinence of both urine and fæces, an evidence, probably, of the prostrate condition of the patients.

The urine was examined regularly in seventy-two cases, and albumen was found in thirty-six, or exactly half. The albuminuria only appeared when a considerable area of skin was involved, and either when the eruption was at its height, or during the later stage of the disease. This is not a surprising circumstance when one considers the large amount of additional work thrown on the kidneys. The albuminuria was probably the result of congestion of these organs; at any rate, in the event of recovery, no signs of organic disease remained; and in all the fatal cases marked hyperæmia existed. In many, but not all (*e.g.*, F. IV.) of those who had previous signs of organic renal disease, the eruption proved fatal.

Lungs.—In most of the fatal cases which were examined after death, the lungs showed intense hypostatic congestion. Case M. XIII. and one or two others were attacked with pleurisy during the course of the disease. Pneumonia occurred in the course of case M. I.,* and also in some others. Attacks of dyspnœa without physical lung signs were observed in M. IX., and, as already mentioned, in all the fatal cases.

The *heart* gave evidence of sharing in the general weakness, and the pulse was usually feeble, of low tension, and often irregular. I do not think any permanent derangement has resulted. The *purpuric basis* of the eruption to which reference has been made may be regarded as a vascular complication. Sometimes, as in the case of M. LXXVIII., it showed itself as a sequel, after the skin had apparently recovered. In that case the entire body and limbs became covered with thickly set spots of extravasated blood, varying in size from a split pea to a large bean. In some of the latter the superficial layers of the skin were raised into a sort of blister, from which a blood clot could be turned out.

Complications and Sequelæ.

The *conjunctivæ* were inflamed in all the severe cases where the face was involved, and discharged a highly irritating sero-purulent fluid. Similar acrid fluid came from the nostrils in a few cases. But the inflammation did not stop here, for the iris was often in-

* Published in the *British Medical Journal*, Dec. 5th, 1891.

Epidemic Skin Disease (Savill.)

Phototype. 6.

Case. M. I. — Stage of Exudation or Desquamation: six weeks from start. To show universal flaking.

volved. Many of the patients suffered from irido-cyclitis, with severe photophobia. Several were troubled for some weeks, after all rash had disappeared, with attacks of recurrent conjunctivitis or iritis (*e.g.*, F. LXVII., F. LXXVII.).

As the skin lesion subsided, several of the patients (twenty or more cases) were troubled with *boils or carbuncles*, sometimes blind—*i.e.*, not containing matter (*e.g.*, M. LIV.)—but more generally suppurating. One case (M. LXXXV.) had as many as nine carbuncles on different parts of his body at one time, and another (F. LXXV.) had five boils at once on the arm.

As the flakes cleared off, the new skin was unduly congested and tender, which was only to be expected; but in several instances this was succeeded by a brownish or chocolate *pigmentation*. The pigmentation was very evenly distributed over the body. None was discovered on the mucous surfaces.

The falling off of the hair and the shedding of the nails, already mentioned, continued for a considerable time (some months) after all signs of the eruption had gone.

Varieties.*

As regards the clinical varieties of the affection, beyond the two types founded on the character of the eruption, to which reference has already been made (p. 11), no other distinct varieties need be recognized. The two types may conveniently be called "Dermatitis humida" and "Dermatitis sicca."

The division into these two classes seems to be a legitimate one, for there are other features which separate these groups, besides the character of the rash. The dermatitis humida generally ran a more rapid course than the dermatitis sicca, which was nearly always prolonged and chronic. Moreover, so far as my recollection serves me, weakness was a more marked feature of the dry variety than of the moist. This was possibly on account of the ages of the sufferers, for there was a distinct tendency for the older sufferers to be affected with the dry variety. The table showing the ages in the respective groups may need revision, but th eaverage age of the moist cases was 62·6 years, and that of the dry 68 years, as compared with

* The substance of the remarks on varieties, diagnosis, etiology and anatomy have already appeared in the *British Medical Journal*, January 9th, 1892.

the 64·8 which is the average age of all the patients attacked. It would seem that the variety of eruption was also determined to some extent by the idiosyncrasy of the patient in possessing what would be called a dry skin, or a moist and easily perspiring one; for the former mostly resulted in dry or "pityriasis" cases, and the latter in moist or "eczematous" ones. Of the total number attacked up to November 1st, 1891, 100 belong to the moist type, forty-five to the dry, and eighteen were of a mixed type, different parts of the body presenting different varieties of the eruption.

Although it is inexpedient to make any other division than the one mentioned, still the cases differed considerably from one another in detail, and especially in the extent and distribution of the rash and the severity of the constitutional symptoms. Some of the cases had only a small amount of the eruption, localized perhaps to one side of the face, or to the ears (as in my own attack), or to the hands, or to the flexures of the joints. In these the constitutional symptoms were generally, though not always, of quite a trivial order, and if seen alone, apart from the epidemic, might (excepting perhaps, the exfoliation) have been taken for eczema, had it not been that other instances of the disease, occurring in the same place and at the same time, linked them step by step with those of a severer type, where the whole body was covered by inflamed skin, and the constitutional symptoms were extreme.

The different manner in which the cases commenced, simulating Rötheln, Erythema papulatum, Ringworm, &c., cannot be said to constitute varieties; for as the case progressed a more or less uniform appearance was presented.

Diagnosis.

Bearing in mind the variation amongst the cases, it is not surprising that some of them require careful differentiation, although a well-marked case presents no great difficulty. The leading feature, the *pathognomonic symptom, of this disease is the exfoliation of the epidermis.* It occurred in all the cases; and it is worth noting that the desquamation took place occasionally in some parts without any previous rash, as in case M. XXXVIII., and like the falling out of the hair in case F. LXX.

A. *Erysipelas.*—When the chief part involved was the face, or indeed any part containing much loose cellular tissue, the tumefac-

PHOTOGRAPH 7.

Case M., XXV.—In 7th week.—*Stage of subsidence.* Shows smooth parchment skin on face; swelling has subsided; rash on chest fading; tremor of arms causes blurring; died four days later.

tion of the parts, sufficient sometimes to close the eyes, bore a strong superficial resemblance to erysipelas. But the gradual advent, the absence of pyrexia, the often vesicular nature of the eruption in some parts of the body, and the fact that the rash occurred in other parts in a more typical manner, were among the features which served to distinguish the cases from erysipelas.

B. *Rötheln.*—We have seen that the rash in eight males and six females began with blotches, and these cases, before the maculæ became confluent, were exceedingly suggestive of German measles. But the eruption was too permanent, and very soon took on a vesicular or scaly character; and, further, the absence of pyrexia with such an extent of rash, almost alone served to distinguish these cases from rötheln. One case presented much difficulty, F. XVIII. In her the patches were not very extensive, did not become confluent, and were only a little scurfy. This case would undoubtedly have passed for rötheln had it not been linked step by step with other cases of the epidemic.

C. *Pityriasis rubra.*—The fact that the disease was an exfoliative dermatitis brought it within this class of malady; and all the cases belonging to the "dry" type had a striking resemblance to the descriptions of pityriasis rubra by Willan and Wilson.* But, in the first place, my cases were evidently contagious, or at any rate occurred in the epidemic form, no mention being made of this in the description by these authors. Secondly, Dr. Liveing says, "the affection (pityriasis rubra) is very commonly met with in children, and persons possessed of a delicate skin and fair complexion," whereas the great majority of these cases occurred in adults and old people. There were very few amongst children, and these very slight. Thirdly, there is the difficulty of reconciling the "moist" cases, which constituted the majority, with the recognized type of pityriasis rubra. Fourthly, Liveing† describes the skin in pityriasis rubra as not infiltrated or thickened, but in my worst cases the skin was very decidedly so, and in all there was distinct induration. Fifthly, pityriasis rubra may last several years, and is said to be a very fatal disease, but no mention is made in the descriptions of either *a definite course* or epi-

* Wilson, "Diseases of the Skin," 5th edition, 1863, p. 111.

† "Diagnosis of Skin Disease," 1878, p. 100. Dr. Radcliff Crocker also says ("Diseases of the Skin," p. 196): "But, with all this intense hyperæmia, no infiltration of the skin is usually present."

demic occurrence. Nevertheless, in some respects my cases tally with these authors' description of pityriasis rubra.

Pityriasis rubra, says the last-named author (p. 98), "is really a rare or peculiar form of eczema, as it is now regarded by Erasmus Wilson, Neumann, and even Hebra himself, who was the first to describe the affection as a distinct disease. It differs from common eczema chiefly in the entire absence of moist exudation on the surface of the skin, and in the extraordinary exfoliation of the cuticle. The first distinction I consider more apparent than real, for I have detected traces of dried exudation of the under surface in several cases."

It may be here mentioned that I examined some of the flakes shed by those cases apparently quite free from any exudation, and, by the aid of a lens, dry secretion was distinctly visible on the under surface, a fact which tends to bring the cases under consideration within the category of vesicular or eczematous diseases.

D. *Eczema.*—Let us, therefore, inquire in what respects the epidemic under consideration resembles eczema in its acute general form:—

1. Both diseases usually start as a papular rash.

2. Both are prone to become vesicular, and to be attended by exudation. We have seen that altogether 118 cases out of 163 had a definite amount of exudation.

3. Both diseases have a marked tendency to select as a starting place the flexures of joints and folds of skin, *e.g.*, beneath the mammæ, or behind the ears; and here also in many of the cases the rash predominated.

4. Both diseases are apt to begin in one part of the body, and then as fresh patches appear in another part, the first one either runs an independent course or fades away; thus, different parts of the body present different stages of the eruption at the same time.

There is no doubt that many of the cases, especially in their early stage, bore a striking resemblance to eczema; and at the commencement of the epidemic, in July,* I fell into the error, and so did others who saw the cases, of supposing that it was a variety of eczema, hitherto undescribed, occurring in an epidemic form; but further scrutiny, and the observation of many more cases, especially in a more advanced condition, have led me to doubt whether it is eczema in any form

* Vide *Lancet*, Aug. 1st, 1891, p. 266.

that we have had to do with; and this view is now shared by others* much more competent to speak than myself.

The differences between the two diseases are :—

1. That the amount of dermal thickening and inflammation is certainly far greater than is seen in eczema of even a severe and protracted kind (*vide* phototype 5). It seems to be an essential part of all fully-established cases, young and old alike.

2. The exfoliation of flakes of epidermis, which occurred in both "moist" and "dry" cases, is different from any other skin disease, excepting pityriasis rubra and scarlatina. In not a single one of my cases was this feature absent.

That a proportion of the cases (about one-third) were apparently free from exudation from beginning to end is not a point on which too much stress should be laid as differentiating them from eczema, for, as we have seen, exudation could be discovered on the under surface of the scales; and thus, in the same way as Dr. Liveing has brought pityriasis rubra into the category of eczema, so could my "dry" cases be brought into a class of vesicular diseases.

3. The definite course of 6 to 8 weeks which most of the cases ran is certainly a notable feature, They were, like eczema, liable to relapse, but the primary attack had a definiteness which differs widely from the clinical history of eczema, either localized or general, and which struck the most casual observer.

4.—In acute general eczema there is usually a certain amount of *malaise*, but nothing like the constitutional disturbance present in the majority of these cases, and which resulted in a fatal issue in the large proportion of 12·8 per cent.

5.—Eczema attacks all ages, and especially the delicate skins of children; but this disease has been almost entirely confined to persons at or beyond the middle period of life, notwithstanding the fact that all ages were exposed to the contagion.

6.—The occurrence of this disease in an epidemic form distinguishes it at once from any variety of eczema hitherto described.

Nevertheless, the resemblance of some of my cases, especially the slighter ones, to eczema, and certain others to pityriasis rubra, was so remarkable as to render it *highly probable that the malady, at*

* Vide discussion at the Medical Society of London, *Brit. Med. Journal*, Dec. 5th, 1891, p. 1207.

least when occurring in a sporadic form, might be, and probably has been, classed as one or other of these diseases.

It is possible that there are other diseases from which these cases ought to be distinguished, but I have purposely abstained from reading authorities lest my mind should become confused or biassed, and prevented, by preconceived notions, from a realization of their true type.

Prognosis.

Out of 163 patients attacked with the disease 28 died; but in 7 of these death was principally due to some other disease. However, in 21, or 12·8 per cent., death was directly dependent on the epidemic malady. Thus the death-rate is higher than that of scarlet fever, which is 10·85 per cent.,* or of small-pox, 10 per cent.; a fact which bears witness to the serious nature of the malady.

Eighteen of the fatal cases were males, and only three females; so that the death-rate amongst the males was 20·22 per cent., and amongst the females only 4·05 per cent. The mortality, therefore, was much greater in the male sex; and this corresponds with another fact—viz., that although the average duration of the disease was about the same in both sexes, the male cases were of much greater severity than the female.

Age seems to have an important influence both on the severity and on the mortality of the affection. The youngest of those who died was 49, the next 59, the average age amongst the 21 fatal cases was 71¼ (77 amongst the females, and 70 amongst the males) as compared with 64·8, the average age of all those attacked.

The mode of onset seems to give no indication of the severity of the attack, for, as already mentioned, it frequently happened that a case, slight at the onset, and slow in developing, would suddenly take on a most acute exacerbation.

Among the constitutional symptoms, the degree of weakness and prostration was a very fair indication of the probable course both as to its duration and issue. And there are two signs which are, as already noted, of the gravest import—tremor or twitchings of the muscles, and laboured respiration without physical signs of lung mischief. Not one of the patients in whom I observed these two symptoms recovered, although, in some cases, they seemed at the time to be doing well in other respects.

* Wynter Blyth: "Manual of Public Health," p. 381.

Treatment.

Very many different kinds of treatment were employed, but when the disease had once become fully established nothing beyond amelioration could be effected. As a local treatment a 1% lotion of Creolin seemed to be efficacious in some cases, and in two or three instances where it was used quite in the initial stage the disease was to all appearances cut short. Even at a later stage this lotion, or a 1% ointment made up with lanoline, seemed to have a remarkably soothing effect on the irritable inflamed skin, and some cases improved considerably under it. Mr. J. R. Lunn found that if collodion were freely applied to a patch of the eruption in an early stage, it checked the progress of the disease.

The irritation from which so many suffered was often relieved by warm soda-baths or bland emollient ointments and lotions, such as vaseline, zinc ointment, calamine lotion, lead lotion, etc., etc.

No internal medication was of much use, but stimulants were distinctly indicated, and in more than one instance large quantities of whisky appeared to avert a fatal issue.

Etiology.

A. Predisposing Causes.—1. *Age.*—Most of the sufferers were in advanced life; indeed, there were none but quite trivial cases in children and young adults. The average age of all males attacked was 63·67, of all females 66·17, and of both sexes 64·8. But not only did all the pronounced cases occur in persons past the middle period of life, but instances might be mentioned where, of several patients equally exposed to contagion, the younger ones escaped and the elders contracted the disease. More than one example is within my recollection where the disease, in its spread along the side of a ward, would skip over a bed containing a younger person.

Nevertheless, it may be objected that there is a larger proportion of elderly people in the Infirmary, and therefore it is necessary to know the number of inmates in each decade of life who were equally exposed to the morbid influence, so as to ascertain the relative proportion of each attacked.

The following table prepared by my colleague, Dr. E. V. Hugo gives the information required :—

TABLE B.—SHOWING PROPORTION BETWEEN THE NUMBER OF THE CASES AT A CERTAIN AGE AND THE NUMBER OF PERSONS IN THE NEW INFIRMARY AT THAT AGE.

Age	1–9		10–19		20–29		30–39		40–49		50–59		60–69		70–79		80–89		Totals at all ages.	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Number of Patients under Treatment at that Age .	27	29	8	16	24	33	28	18	29	29	26	17	43	30	37	42	5	14	227	228
Number of Cases affected with the Disease . .	1	0	0	1	2	2	2	1	8	2	9	2	16	12	18	9	1	4	57	33
Proportion between Cases of the Disease to Patients under Treatment at that age—per cent. . .	3·7	0	0	6·25	8·33	6·06	7·14	5·55	27·58	6·89	34·61	11·76	37·20	40·00	48·64	21·42	20·00	28·57	25·11	14·47
Proportion attacked in both Sexes combined . .	1 out of 56 = 1·78%		1 out of 24 = 4·16%		4 out of 57 = 7·01%		3 out of 46 = 6·52%		10 out of 58 = 17·24%		11 out of 43 = 25·58%		28 out of 73 = 38·35%		27 out of 79 = 34·17%		5 out of 19 = 26·31%		90 out of 455 = 19·78	

From this it will be seen that while only 1, 4, 7, 6 per cent. were attacked among the earlier decades of life, 17, 25, 38, 34, and 26 per cent. suffered in the decades from forty upwards. This is especially noticeable among the males, for whereas the percentages in the first four decades were 3, 0, 8, and 7, the percentage of the 5th decade leaps suddenly to 27 ; the 6th to 34 ; 7th to 37 ; 8th to 48 ; and 9th to 20. Hence one may fairly conclude that advanced life is an important predisposing cause of the disease, and that the predisposition gradually increases up to 80 years of age.

2. *Sex.*—It will be seen from the above table that out of a total of 227 males under treatment in the new infirmary, 57 or 25·1 per cent. were attacked, but out of the 228 females only 33 or 14·4 per cent. were attacked. The figures of the sick-wards do not show quite such a contrast, for of the males 22·14, and of the females 16·94 per cent. were attacked. If both places be taken together it is found that 23·67 per cent. of the total males, and 15·74 per cent. of the total females were attacked ; showing that the male sex exhibited a marked predisposition to the disease.

3.—As to the *occupation* of the patients, it seemed to have no particular influence apart from other causes.

4. *Previous ill-health* and "*Hospitalism.*"—Among the patients of the New Infirmary 19·7 per cent. were attacked, but among the healthy staff only 2 (myself and a housemaid), or 3 per cent. Again, out of 391 patients in the workhouse sick-wards, 18·6 per cent. suffered from the disease ; whereas out of 169 aged and infirm but otherwise healthy inmates of the workhouse proper only 11 were attacked, or 6·5 per cent. And of these latter, 7 (2 males and 5 females) were "helpers" in the sick-wards, and constantly tending on patients already suffering from the disease. From these facts it would seem that previous sickness and "hospitalism" are almost as important factors in the causation as advancing years. Indeed there are only about nine patients now in the Infirmary over 60 years of age who have been in from the commencement of the epidemic, but who have escaped.

5. A careful examination of a tabulated statement of *the diseases* for which the various patients were under treatment at the time when they were attacked with the eruption, did not lead to the suggestion that any particular disease was more prone to be complicated by the

eruption than another, with the possible exception of ulcer of the leg. A rather larger proportion of cases of this disease were attacked with the eruption. A few of the cases exhibited evidences of a gouty diathesis, either in themselves or their family history, but not a sufficient number to show any connection. Some ten of the epidemic cases had had *influenza* during the twelve months preceding the outbreak, but, so far as I have been able to discover, this disease produced no marked predisposing influence.

It has been suggested that the epidemic eruption was one of the various manifestations of influenza, but I have been unable to trace any evidence in support of such a supposition. I owe a great deal to the interest which the "sisters" and the nurses of various wards have taken in assisting me in this inquiry, and the observation of one of them (the sister of V. ward) ought, I think, to be recorded, namely, that five of her patients complained for two or three weeks before the appearance of the rash of symptoms exactly resembling influenza, but *without any elevation of temperature*, namely, headache, pains in the limbs and across the loins, loss of appetite, and a feeling of sickness without actual vomiting. In another ward (VIII.), which contained a good many elderly bedridden patients, the "sister" noticed a very marked falling-off of the appetite for several days before there were any signs or symptoms referable to the skin. Another "sister" (VII. ward) declares that in addition to the feeling of irritation on the skin which many of her patients described before the actual rash appeared, they also complained of feeling very tired, of pains across the loins and down the limbs, without any elevation of temperature, for five or six days before the eruption was visible.

B. Exciting Causes.—Turning next to the possible exciting causes of the epidemic, the first to be examined is *food*. A careful examination of a table showing the articles of dietary partaken of by those affected about the time when they were first attacked, prepared for me by Miss Annette Benson, M.B. the clinical assistant, entirely fails to connect any particular article or articles with the disease, and the mere fact that instances of the same disease have occurred at the Marylebone Infirmary, St. Mary's Hospital, and elsewhere, in which places not only was the dietary scale different, but the articles were procured from different sources, is alone sufficient to preclude the dietary from

any participation in the etiology. It may not be out of place to remark that the dietary at the Paddington Infirmary is exceedingly liberal, and prepared with greater care than usual. The food, both in quantity and quality, is superior to any hospital or infirmary with which I am acquainted. The only articles which the Paddington and Marylebone Infirmaries procure from the same contractor are milk and fish.

2. *The soap* was suspected by some, and inquiry made. But the same soap had been used for a long time previously to the outbreak without any harm. And here again a different soap from a different contractor was in use at Marylebone Infirmary.

3. *Scabies* was another suggestion in the earlier days of the epidemic. But no burrows or other signs were ever found, though careful search was made.

4. *The water-supply* is a possible source of evil either internally or externally. The water-supply of the Paddington Infirmary and Workhouse is derived from the West Middlesex Water Company, that of the Marylebone Infirmary from the Grand Junction Water Company.

Moreover, if any local irritant, such as soap, scabies, or water were the exciting cause, how is it:—(*a.*) That the delicate skins of children and infants escaped in so marked a manner; while the proneness to the disease increased *pari passu* with advancing years. (*b.*) That the parts first attacked by no means always corresponded with the parts most exposed to local influences, and a considerable number started on the back, chest, or abdomen. (*c.*) That the Marylebone Infirmary, obtaining its food, water, and soap from different sources should, at the same time, be subjected to a precisely similar outbreak as the one we are considering.

The question therefore remains:—Is the disease due to some obscure *epidemic influence* such as climate, atmosphere, season, or contagion?

5. *Climatic or atmospheric causes.*—It certainly is a remarkable circumstance that the two neighbouring metropolitan infirmaries which are the newest, and which are therefore, if one may say so, renowned for their sanitary perfection, should be simultaneously subjected to the ravages of this disease. A few cases occurred at Lambeth,* but nothing like the outbreak at either of the other two. The remaining twenty-two metropolitan infirmaries, containing up-

* Details of which appear at the end.

wards of 10,000 inmates of the same class, seem to have been exempt. Dr. Downes stated* that those of the rest of England were also exempt.

6. *Soil.*—The Paddington Infirmary is built on a hill of nearly the same altitude as Sydenham and Highgate hills. The soil immediately beneath is London Clay; both this and the Marylebone Infirmary being situated just outside the strip of surface gravel which runs along the Bayswater Road. The depth of the "London Clay" in this neighbourhood is about 200 ft. Beneath this comes a narrow strip, 50 or 60 ft., of the "Woolwich and Reading Beds" (clays, loams, sands, pebble beds, various); and, under this, 600 ft. of "Chalk." Beneath this a narrow layer, not more than 15 ft., of "Upper Green Sand" separates the Chalk from the "Gault" below.

An interesting fact has come to my notice. During the small-pox epidemic of 1881, and previously, the ground on which the Paddington New Infirmary now stands was used for the erection of wooden huts into which small-pox cases were received. In 1883 when excavations were being made for the foundations of the new buildings an old cesspool was tapped, from which the stench was described as very powerful. Out of ten workmen engaged at this particular spot four immediately developed small-pox, and two of them died. This fact may possibly be of some interest if read in connection with the remarks concerning compound diseases (p. 37 *et seq.*).

7. *Season.*—Superficial examination of the occurrence is somewhat suggestive that an obscure seasonal influence, though certainly not the proximate and only cause, may take some part in the etiology; for at Paddington the outbreak has been strictly limited to the summer and autumn months; and Mr. Lunn and Dr. Richards stated that cases of a similar disease occurred at Marylebone Infirmary and Hanwell Asylum respectively in autumn (1890), only of a milder type and fewer in number. The following table shows the numbers which were attacked in the various months at Paddington, from which it will be seen that the greatest number occurred in July and August:—

* Discussion at the Medical Society.

Table C.

	May.	June.	July.	August.	eptember.	October.
Males	2	11	37	29	6	4
Females ...	0	9	22	27	9	7
Totals ...	2	20	59	56	15	11

8. *Contagion.*—There are many features in which this malady resembles a specific infectious disease, although the absence of pyrexia almost alone forbids it being grouped with this class of disorder. The absence of fever is a point of considerable interest and will merit further investigation. Nevertheless there is sufficient evidence in the clinical history of the epidemic, and of the cases, to prove that it is contagious, and due to the presence of a specific living organism :—

i. The definite course of seven or eight weeks through which the primary attack mostly ran.

ii. The symptoms of constitutional disturbance which attended the skin lesion.

iii. Although, as we have seen, the cases differed widely in detail, the marked general resemblance between them all was a fact which struck the most casual observer ; and the inference, therefore, is that the cause, whatever it be, is specific.

iv. These three features, in presence of a cutaneous eruption, complete the resemblance to a contagious eruptive fever.

v. The serpiginous rings with which some of the cases started were almost identical in appearance with tinea circinata, a malady known to be due to a living organism (Phototype 4).

vi. The marked effect of germicides in modifying the skin lesion when applied at an early stage. The efficacy of collodion applied to and sealing up a patch in a very early stage, preventing its spread, is a fact having a similar bearing.*

vii. The wave-like manner in which the outbreak rose and fell, strictly limited to the summer and autumn months of 1891.

* *Vide* pp. 25 and 61.

viii. Clear instances of direct contagion are always difficult to establish; but it is worthy of note that 7 of the 11 persons who, out of 193 healthy aged inmates of the workhouse proper, contracted the disease, were acting as "helpers" or pauper nurses, tending on, and in direct contact with, patients already suffering from the complaint. And further, the facts that I and my little dog contracted undoubted attacks of the disease are particularly interesting in this connection.

ix. The constant presence of a specific organism which I have discovered in the serum and exudation; and which Dr. Russell* has demonstrated in the blood and tissues.

Nevertheless the disease is not malignantly contagious, for it does not, as we have seen, attack the sick and healthy indiscriminately. Certain predisposing conditions would seem to be essential, chief among which are advanced age and sickness.

Whether one attack confers immunity, and whether there exists a period of incubation,† are questions which cannot be answered at present. There would seem to be a prodromal period in some cases, as mentioned on p. 28.

There are certain features which are highly suggestive, though not more than suggestive, that the specific contagion, whatever it be, *attacks the unbroken skin, and is subsequently introduced into the system in this manner.*

1. The ringed serpiginous character of the eruption at the outset, which was definitely observed in six cases (Phototype 4).

2. The marked effect of local germicides in controlling the disease, if applied in the early stages of many of the cases; and of absolutely cutting it short in at least one.

3. The eruption showed some tendency to start on exposed parts, such as the face and ears, and to spread thence. This is what one would expect with an air-born germ.

4. The proneness of the eruption to assume an eczematous character; eczema being the form of skin disease which most often comes from local irritation (*e.g.* "Baker's itch," &c.).

* Dr. Russell's Bacteriological Report appears in the April (1892) number of the *British Journal of Dermatology.*

† Case M. XXXI. developed the rash two days after admission, case M. XX. four days, and case M. XXV. four weeks after admission, and it is beyond doubt that they contracted the disease in the Infirmary.

In some cases it seemed probable that the microbe gained access to the blood by some other means (possibly the alimentary canal in cases M. XI., XXXV., XXXVIII.), without first attacking the skin.

Bacteriology, and the Disease in Animals.

The *British Medical Journal* of Jan. 9th contains an account of some experiments I was able to perform in Professor Klein's laboratory while the epidemic was in progress. Specimens of the blood and tissues were taken from patients, both dead and living, and set aside for investigation. But, as the exudation and scales were less likely to keep, I devoted my attention at once to these. In addition to examining the scales, both under the microscope and on culture media, the exudation, after the skin had been disinfected and allowed to exude afresh, was also examined. Once I was fortunate enough to obtain the serum from an unbroken vesicle.

As far as these experiments went, they demonstrated the constant presence, in the serum (both from the unbroken vesicle and obtained by pricking the swollen skin) and exudation of patients suffering from the disease, of a microbe whose characters were as follows. It is an aërobic diplococcus (Phototype 8) which grows on all media, and which does not liquify gelatine—at any rate, for a considerable time. The cultures have a whitish translucent appearance, like a *thin* layer of bluish white paint, a crescentic outline, and take two or three days to mature in the hot chamber, and five or six days in the cold.* The organism bears some resemblance to staphylococcus albus, but differs from it in not liquefying gelatin, and some other points. Other organisms were of course present, but only this one was constant. Its constant presence and intimate relation to the tissue elements have led me to conclude that it is the specific organism of the disease, though its pathogenic properties require further investigation.

Dr. Russell,† by perfectly independent researches, has detected identically the same organism in the blood, skin and other tissues. Thus, in all the fluids and in the more important tissues of the body, both living and dead, this organism has been found by independent observers.

* Unfortunately these periods became transposed in the account in the *British Medical Journal*, loc. cit., p. 61.

† *British Journal of Dermatology* for April, 1892.

But the pathogenic properties of this microbe require further study. Up to the present time, the disease has only twice been conveyed to animals. My little dog spontaneously contracted an undoubted attack of the disease. It is accustomed to make the daily round with me of all the wards; and when the epidemic was in progress, its back became red, in places slightly exuding, and very irritable. It was excessively thirsty, restless at night, and subject to attacks of panting without cause. After a week or so it recovered, and then the hair came out in large quantities.

The other instance was a rabbit which Dr. Klein inoculated with a pure sub-sub-culture originally obtained from the unbroken vesicle alluded to (case M. V.). For two days the animal presented no signs; but on the fifth day, the ears and parts of the body became distinctly scurfy and red. This subsided somewhat on the eleventh day, the animal appearing all along in its usual health. On the twelfth day it died without obvious cause. Specimens of the blood and scurf were hermetically sealed and set aside. Subsequently, Dr. Russell obtained from these pure cultures of the characteristic diplococcus, which corresponded in all particulars with the cultures obtained from patients who suffered from the disease. An illustration of the culture obtained from the rabbit's blood accompanies Dr. Russell's paper.

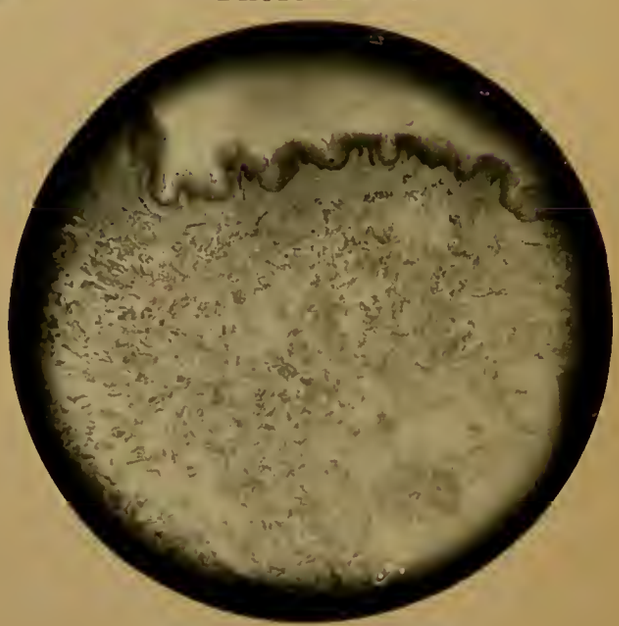
Anatomy.

The essential lesion is an inflammation of the derma, a dermatitis. No other special morbid change was found after death. Microscopical and other examination revealed considerable *effusion of cells and fluid between the derma and epidermis;* and, as a result, the latter was separated in flakes, scales, or dust. It always seemed that if, by reason of the thickness of the cuticle, the upward resistance was too great for the fluid to collect around the papillæ into vesicles, therefore vesicles did not form, and no exudation was visible on the surface. Nevertheless the exudation was there, and it might, as already stated, be discovered by the aid of a simple lens, on the under surface of the flakes. Under these circumstances it made its way laterally beneath the cuticle, and caused separation of the latter in flakes of larger size. This was what usually happened in the skin of the palm, where the

PHOTOTYPE 8.

PHOTOTYPE 9.

PHOTOTYPE 10.



PHOTOTYPE 8.—Pure culture of a specific organism found in the blood of Case M., XXV. (phototype 7, and p. 52) (Swift's $\frac{1}{12}$" and projection eyepiece). After death the heart was rapidly removed and plunged whole in strong sublimate solution, withdrawn, and a nick made in left ventricle: three sterile capillary tubes pushed into the cavity, allowed to fill, and hermetically sealed. *The tubes were set aside for three months.* At the end of that time one tube was found to be swarming with various bacteria. It was evidently contaminated. But the other two gave *pure* cultures (from which the above was taken), *and no other organisms were present.* With a lens all the cocci will be seen to be in pairs. Under high powers, the elements are mostly oval, placed usually side by side, sometimes end to end. A "diploeoccus" having identically the same form and behaviour has been constantly found in the serum and exudation of other cases by myself, and in the skin, scales, and blood, by Dr. J. Risien Russell (*British Journal of Dermatology*, April, 1892).

PHOTOTYPE 9.—Skin of palm from Case M., XIV. (p. 49); death on 41st day. Shows excess of newly formed, highly vascular tissue in dermis; cells of Rete Mucosum swollen. Superficial cells of epidermis have come off in flakes.

PHOTOTYPE 10.—Section of normal skin for comparison. Precisely the same amplification (Zeiss's a' a').

epidermis is comparatively thick, and also to a less extent in the general skin of old people, in whom the cuticle is thicker than in childhood, though the derma is atrophied.

This, I take it, was the explanation why the "dry" type should tend to prevail among the old, and the "moist" variety among the middle-aged sufferers; for out of the 89 males available for observation on this point, the average age amongst the "dry" cases was 72, that amongst the "moist" cases 60, the average age amongst all these 89 males being 63·6. Nevertheless, the two types are clearly the result of one and the same pathological change.

The changes in the *derma* consisted, in the earlier stage, of a large excess of leucocytes; in the later stages, of a large excess of fibrous tissue (Phototype 9).

In most of the fatal cases which were examined after death the lungs revealed intense hypostatic congestion; but, inasmuch as death took place either by asthenia (in most cases) or coma, this is rather to be regarded as part of the latter conditions than as a pathological change proper to the disease.

Inferences,
And Remarks on the Nature of the Disease.

In all that has gone before, I have endeavoured to give a true picture of the facts of this strange epidemic; but now, in conclusion, it may not be out of place to inquire what are the inferences to be drawn from these facts; what are the lessons to be learned?

And first, if it be conceded that all of these cases are the result of one pathological cause—one proximate principle or influence—it is interesting to note how different may be the appearances which result, under different circumstances, in different individuals, from one morbid principle. The tendency at the present day seems to be to analyze or separate an old disease into two or more varieties. But this is an opposite process; for the facts mentioned go far to prove *the identity of the two conditions Eczema and Pityriasis rubra.*

Next, let us inquire, What is the nature of this unusual outbreak? I wish at the outset to record my sincere regret that an abler and more experienced observer than myself did not have the advantage of daily observing these cases throughout their whole course; or at any

rate that a committee of some learned society was not appointed at an early date to investigate all the circumstances.

The various theories suggested may, I think, be grouped under three heads. 1. Is it an old disease, such as eczema or pityriasis rubra, occurring under a new and epidemic form? 2. Is it a compound disease, such as septic eczema, scarlatinal eczema, or erysipelatous eczema? 3. Is it an altogether new disease which has never visited this country before?

It has been said by high authorities* that there is nothing very new in the disease excepting the occurrence of so large a number of cases in one place, and that this is explained by the fact of so many aged and sick being collected. But with great deference I would point out, first, that the occurrence of 163 cases at one time and in one place of any disease not hitherto regarded as contagious is of itself sufficiently new and startling; and secondly, that the aged sick of London have been collected into workhouse infirmaries ever since the year 1867, and how is it that a similar epidemic has never been known before? The average age of the inmates in the Paddington Infirmary is probably lower than any other, because most of the infirm cases are selected and transferred to the adjacent workhouse sick-wards; and yet this infirmary is selected for its chief manifestation! Moreover, the disease was by no means confined to the sick and aged; patients such as M. XXV., M. XXXI., M. XXXIII., M. LIV., and others, who were all in prime manhood and health, and who had come in for unimportant complaints, were smitten shortly after admission with most severe attacks, and one of them, only forty-nine years of age, died.

Mr. Malcolm Morris† has made the valuable suggestion that the disease was *contagious* eczema, taking on a severe and lethal form of pityriasis rubra by reason of the age and debility of the patients. But such a theory does not explain the definite course through which the disease ran, and the other phenomena of the epidemic, especially those just mentioned, and others of a similar kind. Moreover, if it be eczema in any form it should obey the laws of that disease. But it does not; for children were almost exempt; most of the gouty

* *E.g.*, Mr. Jonathan Hutchinson, *Archives of Surgery*, October, 1891, and January, 1892.

† Discussion at the Harveian Society, January 17, 1892.

patients who were attacked (*e.g.*, M. XXIX.) had the disease in a mild form; and several gouty folk escaped altogether. Cases M. I. and M. V. had acute general eczema and recovered, but when they contracted the contagious dermatitis they died; other patients (*e.g.*, M. I., IV., and XII.) had both diseases consecutively, and recovered; and all of these illustrated well the difference between the two diseases, occurring, as they did, in the same individuals.

The differences between the disease under consideration and both eczema and pityriasis rubra have been indicated in the body of this paper (p. 21), and it seems to me difficult to make all the features of the epidemic coincide with these, or indeed with any other known disease. Dr. Lees, under whose care four cases,* (one of them fatal) occurred at St. Mary's Hospital, writes, "Whatever the disease is, it is not eczema"; and Dr. Stephen Mackenzie has remarked† that in his experience the epidemic was unique.

Next, let us consider the second question, is the disease a compound one? The suggestion that it might be eczema compounded with a *septic element* is possibly favoured by the occurrence of boils and bubos with which some of the patients suffered.

That it might be *Scarlatinal Eczema* is favoured by the extensive exfoliation, the constant and pathognomonic feature of all the cases, which occurred to an extent that is only equalled in scarlet fever and pityriasis rubra. In a case communicated to me by Mr. Turner, of the Western General Dispensary, and which, through his kindness, I had the opportunity of seeing, a child of the patient was removed with scarlatina just at the time the father, a man about 35 years of age, became affected with the contagious dermatitis.‡ But the usual absence of pyrexia, and the immunity of the young, are alone almost sufficient to negative this supposition.

That the disease was *erysipelatous eczema* is a view favoured by Mr. Hutchinson§ and Mr. Startin,‖ and is a theory which has much to recommend it; though here again the absence of pyrexia and the usually gradual advent are hard to explain.

* *Lancet*, August 15, 1891, and see p. 61 *post*.

† Discussion at Medical Society, November 30, 1891 (*Lancet*, Dec. 5, 1891).

‡ The patient was shown at the Harveian Society on January 17th, 1892.

§ *Archives of Surgery*, January, 1892, p. 222.

‖ Discussion at the Medical Society, November 30th, 1891.

Each of these suggestions is plausible. Their proof or disproof will probably form part of the future history of bacteriology. That compound diseases should occur seems far from unlikely; indeed, it seems almost necessary for a true conception of the evolution of species. But if this be the true explanation it is to that extent a new disease, albeit a compound one.*

Whether the disease is one which has been known in other countries, and is new to this, is a matter on which information is still wanting.

In the meantime, there is a point of interest worth consideration. *Have we here to do with a local disease giving rise to secondary constitutional manifestation, or a general disorder having secondary local effects?* was a question constantly present in my mind; and it seemed at first that whereas one theory explained one set of cases, the other explained another set. But at length the reason for this discrepancy became apparent. It depended entirely on the stage which the case under observation had reached. The majority of the cases started with a slight eruption which gradually faded away a few days later, but then, taking on fresh action, broke out with redoubled vigour. In this preliminary stage the rash was usually asymmetrical, and the constitutional symptoms slight or absent; in the fully established disease the rash was symmetrical, and the general disturbance marked. I have already (p. 32 *ante*) given reasons for believing that the disease was due to a microbe, which, lighting on the skin, set up irritation there, and by that means gained entrance into the blood. Here, then, is another fact in keeping with this hypothesis, for during the preliminary stage, while the microbe sets up local irritation only, the disease corresponds to a local malady; and then, when the microbe gains entrance into the blood, the disease takes a fresh start, progresses with redoubled vigour, and corresponds to a constitutional malady, due to a poison in the blood, which determines, secondarily, symmetrical local lesions in the skin. This hypothesis seemed to me to adequately explain the phenomena of all the cases. In those where the preliminary stage was absent, the rash was symmetrical from the commencement, and the constitutional symptoms were observed at once, or even in some instances before the rash appeared. In these it was obvious that the microbe gained, by some means (possibly the alimentary canal

* This question is referred to in an address by Mr. Hutchinson "On the Laws of Contagion from a Clinical Standpoint."—*Medical Chronicle*, November, 1891. The small-pox incident (p. 30 *ante*) is of some interest in this connection.

in M. XI., XXXV., and XXXVIII.), immediate access to the blood without first attacking the skin.

The absolute experimental proof of this hypothesis would rest in the constant presence of the characteristic diplococcus in the skin and exudation, but its absence from the blood and organs, in the preliminary stage; and its equally constant presence in both skin and blood in the fully established disease. It receives clinical illustration in M. II. and many other cases; indeed, nearly all the cases present features difficult of explanation without this hypothesis.

Nosology of the Disease.

In the absence of any other, I would suggest the title "General Exfoliative Epidemic Dermatitis" as a name for the disease. This at least has the merit of describing its salient features without implying any theory; though, on the other hand, it may be said to be not sufficiently distinctive from other exfoliative disorders. In the Infirmary records the disease was classed as "*Epidemic Eczema*," on account of the first impression produced by the disease; and the term was afterwards preserved in order to obviate confusion.

I am inclined to agree with Dr. Colcott Fox that the disease belongs generally to the Eczematous group, though most of the cases differed from the ordinary type of that complaint in the manner already indicated (p. 23 *ante*). Case M. XXII. and some others bore a very exact resemblance, in their physical characters, to acute vesicular eczema; but even in these, the definite course, the amount of constitutional disturbance, and the special predilection for the aged are important points of distinction.

As regards its relation to Pityriasis Rubra, the difficulty exists of this term denoting both a disease *sui generis*, and also the concluding stages of other skin diseases, such as Psoriasis, Lichen Ruber, &c., if they generalize and exfoliate. The pathognomonic feature of exfoliation, present in all the cases, brings the disease into even closer relation with this term than with eczema; but the presence of infiltration, and the definite course, establish a marked distinction.

It will be important to learn whether the specific microbe which Dr. Russell and I have observed in these cases is present in examples of the two disorders mentioned.

DESCRIPTION OF ILLUSTRATIONS.

*Case M. XLV. Fig. 1 is from a photograph taken on November 16th, of a man named J. G——, æt. 71, a gardener by trade, who had been admitted the previous July for Morbus Coxæ Senilis. He had the skin disease very severely, the primary attack lasting ten-and-a-half weeks, and being followed by two recrudescences, the photo being taken eighteen days from the commencement of the second. This was one of the cases which *commenced as flattened papules or maculæ*, and the eruption preserved this character throughout, though for the most part these became confluent. Scattered maculæ can still be seen on the legs, feet and chest. The cracked, exfoliating flakes can be seen on the arms, forearms and hands, flakes which came off the latter in pieces the size of shillings and half-crowns, elsewhere in fine powder. By close inspection the swollen condition of the face and eyelids, which are half-closed, can be seen. The patient also had severe muco-purulent conjunctivitis. The eruption commenced on the forehead, ears, and neck, and the whole body had at one time or another been involved. It was complicated by a purpuric condition. This case belongs to the "moist" type, for there was a good deal of exudation in parts, especially about the face.

The temperature in this case averaged 98·5°. He had three elevations only to 102°. It was often subnormal in the morning. The constitutional symptoms were slight at first, latterly severe, and consisted chiefly of anorexia and prostration. At one time it seemed doubtful if he would recover. He had some vomiting, but no diarrhœa. Transient albuminuria was noted during the eighth and ninth weeks of the primary attack. The family and previous histories are unimportant, and throw no light on the causation. At the present time the patient is practically convalescent, though still very weak. It should always be borne in mind that many cases occur of a muc slighter degree than this case.

Fig. 2 represents a cast of the entire cuticle of the anterior surface of the hand and fingers of case M. XXV. (given in full on p. 52). In this case there was very copious formation of vesicles and exudation on the face, trunk, and flexures of the limbs; it was evidently a "moist" type of case. No vesicles were ever visible on his hands, and the only appearance of rash in this position was a uniform redness with tumefaction of the skin. In some cases the cuticle was shed in large flakes like this, sometimes in smaller bran-like scales, and sometimes it took the form of impalpable powder. The hands and feet were always last to exfoliate; and the larger flakes always came from the extremities of the limbs, the smaller from the trunk—facts explained by the epidermis being thicker in the former position

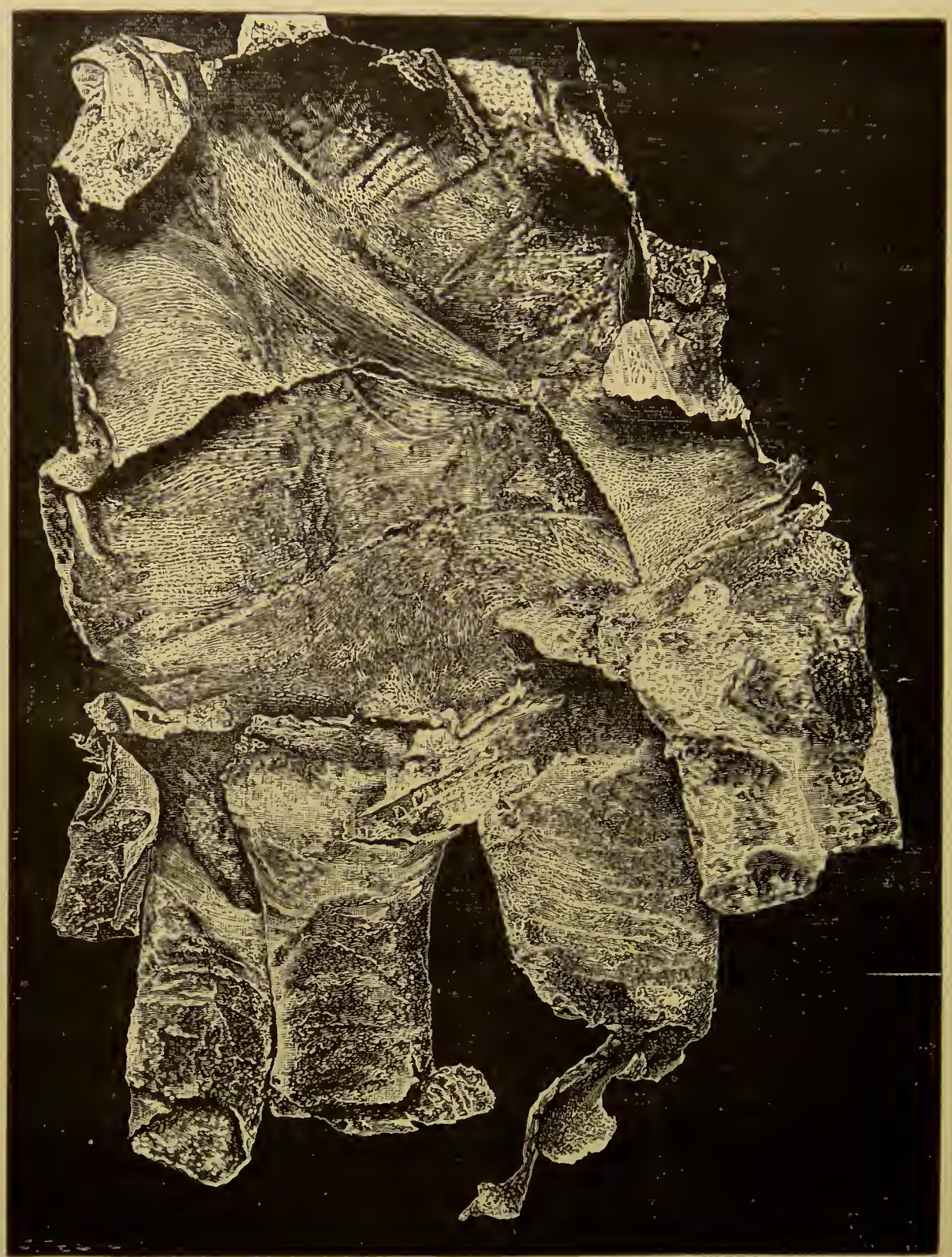
West, Newman, imp.

Fig. 1.

A CASE OF EPIDEMIC DERMATITIS (SAVILL).

Case M.XLV

Coloured plate of this patients head appears in the British Medical Journal. Dec^r 5. 1891.



West, Newman, imp.

Fig. 2.

CAST OF PALM, FROM A CASE OF EPIDEMIC DERMATITIS (SAVILL).

From case M.XXV (Phototype.)

CASES OF THE EPIDEMIC SKIN DISEASE.

I.—Cases at the Paddington Infirmary.

The following is a summary of the principal facts in the history of those cases which present any feature of interest. To any one who takes peculiar interest in the matter, I shall have great pleasure in showing the detailed notes of the cases as they were taken at the bed-side by my colleagues Dr. Hugo, Miss Benson M.B. Lond., and myself; as well as the sketches, photographs, flakes of epidermis, pathological and bacteriological specimens; but it is obviously inconvenient and unnecessary to burden this journal with prolix and often irrelevant details; and cases of the ordinary type, presenting no points of interest, will be omitted entirely. The selected cases are arranged more or less in chronological order of date of attack; the earlier cases are less interesting and important than the later ones. *The salient features of each case are indicated by italics.* As far as possible quotations from the notes are allowed to tell their own tale. Photographs were made of those marked with an asterisk (*) and some others, and can be had on application to the author.

The New Infirmary and the old Workhouse Infirm-Wards adjoin. The former contains the more severe and acute cases of disease, requiring more nursing and medical treatment; patients suffering simply from the infirmities of age are transferred to the latter. Out of 455 patients (227 m. and 228 f.) who passed under treatment in the New Infirmary, July 1st to October 31st, 89 (56 m. and 33 f.) were attacked with the Dermatitis, or nearly 20 per cent. (24 °/₀ m. and 14 °/₀ f.). Out of 391 patients (149 m. and 242 f.) who passed under treatment in the Infirm-Wards, 74 (33 m. and 41 f.) were attacked, or 19 per cent. (22 °/₀ m. and 17 °/₀ f.). These figures are of interest, as showing that, though *age* may be an important factor in causation, it is *not the most important one;* else a higher per-centage of cases should have occurred in the Infirm-Wards than in the New Infirmary.

Male Cases in the New Infirmary.

*Case M. I.—P. R——., æt. 70, a tailor, was admitted to VI ward, bed 4, on January 1st, 1891, on account of Left Hemiplegia, and a severe Burn on the para-

* Full notes of this case are to be found in the *Brit. Journal*, Dec. 5th, 1891, p. 1199. A photo was taken of this case in the sixth week of disease, and is reproduced in phototype 6.

lyzed leg. There was no antecedent history of gout or skin disease. He had had "a fit" a few days before, during which the paralysis had come on, and at the same time he had burned his leg against the bars of the fire. The slough separated and the burn healed in due course. *On March* 14th *he was the subject of an attack, which resembled in all respects acute general eczema*, commencing on the back, and rapidly involving the whole of the body. By the middle of July he was nearly well of this, *but on July* 28*th a drier eruption, attended with more thickening of the skin*, started on the back, and spreading to the abdomen, face, and head, rapidly became general. It began as a papular eruption and went on to exfoliation without much exudation anywhere. The photo*, which was taken in the sixth week, shows the extensive exfoliation of the cuticle, and in parts the tumefaction of the skin, though at this time it was beginning to subside. There was a great deal of irritation, and occasionally a feeling of chilliness. The temperature, with few exceptions, was normal or subnormal. Later on he had a localized consolidation of the lung, but he rallied from this, and ultimately died in a state of coma, with suppression of urine. The temperature, in the last seven mornings of life, was subnormal. Duration of eruption nearly twelve weeks. The constitutional symptoms in this case consisted of extreme loss of appetite, so that it was most difficult to get the patient to take even fluid nourishment; and gradually increasing prostration, so that he was scarcely able to move a limb. Towards the end of life the respiration was considerably embarrassed, and the subsultus tendinum was very marked. It is worthy of note, that *although the patient suffered from left hemiparesis, the two sides of the body were pretty equally involved in the rash.*

Treatment.—Internally, quinine, stimulants, benzoate of ammonia. *He rallied considerably, when put on whiskey.* Externally, ung. ox. zinc., lot. calaminæ, lot creolin, vaseline. No marked effect of any.

At the autopsy, nineteen hours after death, the signs of the pneumonia were discovered in both lungs. The kidneys were fairly normal for his age. The tongue during life had been raw, dry and glossy, all the time, but there had been no vomiting or diarrhœa, nevertheless, *the alimentary canal*, after death, *showed marked signs of disease* in the shape of hæmorrhagic extravasations, in the stomach and along the small intestine.

There was also *a leathery film* covering the mucous membrane, from about the middle of the ileum down to the rectum, which was highly suggestive of a desquamation of the epithelium, similar to that of the epidermis. The mucous membrane itself was also somewhat thickened.

Remarks.—This case exhibited, in the same individual, the *differences between acute general eczema and the epidemic dermatitis, with both of which the patient was attacked at different times.* And in this case the *internal, as well as the external, surface of the body* was involved in the dermal inflammation; in a word, *all the epiblastic elements.*

M. II.—William B.——, aged 73, a gardener, was admitted into VIII ward, bed 8, on account of Cardio-Vascular Disease, April 13th, 1891, and he died September 14th, 1891. There was no antecedent history of skin disease, gout, or other predisposing cause. In *May*, he was up and about all day, but in the latter part of that month, a dry "eczematous" rash† appeared on the arms and legs. It

* Phototype 6. † Inverted commas always indicate quotation from the notes.

remained in that condition for about eight weeks, and then faded away, no constitutional symptoms attending; but very soon afterwards, *July 28th*, the rash returned, involved other parts, *became much more severe, was purpuric in places, resulted in extensive desquamation*, and after involving the whole body, again faded. This time there was loss of appetite and prostration, so that he had to take to bed. Again he got better; but in *August* he relapsed, and almost the whole body was simultaneously affected with a papular eruption, at first discrete, and then becoming erythemato-papular, with considerable thickening of the skin, which had not occurred in the two previous attacks.

This went on to profuse exfoliation, with, here and there, the formation of vesicles and exudation. The hair came out, the nails were affected, the appetite was lost, and the prostration extreme. The crimson skin continually shed its epidermis, the eyes were severely inflamed; and we knew by the fibrillar twitchings of the muscles, the embarrassed respiration without pulmonary signs, and the low temperature, that the end was approaching.

The rash had almost cleared up when this patient died. The fatal termination was the result of the extreme prostration. It occurred somewhat suddenly, and was finally produced by cardiac failure, the mind being quite clear up to the end.

Autopsy made twelve hours after death. All the middle-sized and smaller arteries, except those of the brain, were considerably thickened. The heart weighed 19 ozs., and though its wall was thicker than natural, the cavities were dilated, and the substance degenerated; facts which accounted for the sudden mode of death. Lungs, congested; spleen, normal; kidneys, $4\frac{1}{2}$ and 5 ozs., healthy.

This patient, like the preceding, was the subject of what seemed to be *an attack of acute general eczema, followed by severe epidemic dermatitis*, differing from the first in the extensive induration of skin, the purpuric basis, and the severity of the constitutional symptoms, which terminated fatally. *It illustrates the distinction between the two diseases.*

Case M. III.—Alfred P——, aged 53, a photographer, was admitted into VII ward, bed 3, on October 20th, 1890, on account of Blenorrhagic Arthritis, and Aortic Disease. He had suffered from the former for thirty-five years, having had fifteen acute attacks, and the consequence was, extreme distortion of all the joints. Though extremely intelligent, he was an undersized, ill-developed man at best; but his skin had always been white, smooth, and free from any affection; he was in very fair general health, and getting up and about daily, when in *June*, 1891, a slight roughness was observed on the forehead and elbows; here the skin soon became reddened, infiltrated, and raised above the surrounding parts, and the surface was scaly. Towards the end of *June*, the patient had some coryza and nasal catarrh. On the *30th* of *June*, scattered papules appeared on the backs of the arms, fore arms, and hands, accompanied by slight itching. The papules soon blended, and formed patches covered by scales, and a considerable area of the body was involved, fresh patches appearing as the old got better.

August 6th.—Patient says that "*the skin eruption gets better and then worse; each fresh attack is preceded by coryza.*" There was a good deal of thickening of the skin in parts, and exudation in places.

By *August 14th*, a general improvement in skin condition took place. The primary attack lasted five weeks, but he had five or six relapses. It was followed by considerable pigmentation and loss of hair. There was a good deal of burning and

irritation, but the constitutional disturbance was slight, so that he was able to get up all the time. This was a moist type of case of moderate severity. There was some anorexia and nausea, and once (October 9th) a trace of albumen.

Treatment.—Liq. arsen., ung. diachylon, lot. creoline, ung. lan. cum creol., ung. zinc., vaseline. The latter allayed the irritation; so also did soda-baths.

Altogether the disease was on him for six months; and those who hold that *the disease is connected with influenza will be interested to hear that the commencement of each of the relapses in this case was attended by coryza*, running from eyes and nose.

Case M. IV.—John W——, æt. 50, a labourer, was admitted into V ward, bed 23, on September 16th, 1889, for Eczema of the Hands, which he had off and on for seven years, and which he continued to have, in spite of all treatment, *up to the time he contracted the epidemic malady in June* 1891. The only remedy which had done him any good was ung. hyd. am. cum carb. deterg.

The eczema had always been confined strictly to the hands, but about the middle of *June it was noted that he "felt rather sick and languid"; and a few days later "eczematous" patches appeared on the face.* From the face and head, it spread nearly over the whole body, and, after lasting eight weeks, began to fade. The eruption was essentially vesicular, and when seen by Dr. Colcott Fox, *at an early stage*, was said to be *indistinguishable from acute general eczema.*

In the later stages of the disease there was a good deal of swelling of the legs, but the thickening elsewhere was moderate. Beyond the sickness and headache, the constitutional symptoms were slight. He had three relapses, some loss of hair, and pigmentation, following the rash; the last relapse was *attended by shooting pains in the legs*, and extensive exfoliation. The rash was noted on *September 21st* as "spreading by slight raised pin's-head spots, scaling on the top—which blend to form scaly patches—chiefly on extensor surfaces."

The epidemic malady seemed to cure his hands, for these were the first parts to get well, and have remained so ever since. The treatment of localized eczema of the hands need not be mentioned. At the present time (December 1891), he says he has never been so well for seven years. The epidemic skin condition was treated by ung. zinc., lot. plumbi cum opio, lot. calaminæ, ung. creolin., liq. arsen. *Cultivations of the characteristic microbe were obtained from the serum (obtained by pricking the skin) and exudation in this case.*

Case M. V.—John S——, æt. 64, a bricklayer, was admitted to V ward, bed 25, on August 9th, 1890, for Cataract and Granular Kidney. He was feeble, even for his age, but the cataract was successfully removed on August 16th, 1890. He had had gout for thirty years, and an attack of eczema in July, 1890. In December, 1890, he had had an attack of skin disease, described as consisting of "eczematous reddened patches, scaly and itching on the head, neck, legs, and back, lasting about three weeks; which was followed by acute gout in the right hand and elbow." In May, 1891, the right hand again suffered from gout.

At the beginning of *June* 1891, the patient was in fairly good general health, getting up daily; and although troubled from time to time with symptoms of Chronic Bright's Disease, he remained well until *July 10th*, when a papular eruption made its appearance *on the back*, and soon spread to the legs, face, and rest of the body. It was very irritating, and there was a good deal of thickening and exfolia-

tion. By the 20*th of July*, the dermatitis had become universal. The feet and legs were swollen and red. Patient had become much weaker, wandered a great deal, and had double incontinence. The temperature at night had been slightly elevated (99·4°). *July* 27*th*.—Diarrhœa came on. The patient was rapidly losing flesh, the skin was deep red, and exfoliating. There was no exudation at any time. The hair had rapidly thinned, so that the patient was almost bald. The skin of the arms was indurated, and the feet and legs pitted deeply on pressure. He became very drowsy and then unconscious. There were no convulsions at any time. The respirations were frequent, and of a Cheyne-Stokes type. Sordes accumulated round the teeth, and the patient died comatose, on *July* 29*th*, after suffering from the dermatitis five and a half weeks. Treatment: Liq. arsen., lot. plumbi cum opio, which allayed the inflammation of the legs considerably.

Autopsy made twenty-three hours after death. Heart considerably hypertrophied and firm. Lungs, fibrous and emphysematous in parts; congestion and œdema at the bases; liver and spleen, normal; kidneys weighed only two and a half ounces each, and were in an advanced granular condition; brain, excess of fluid on surface; convolutions wasted; small localized softenings in the interior.

The previous condition of the kidneys undoubtedly contributed to the fatal issue, but the immediate cause of death was unquestionably the dermatitis. Here again is a case illustrating the difference between ordinary eczema from which the patient frequently suffered and recovered, and the epidemic dermatitis from which he died.

Case M. VI.—Richard J——, æt. 75, a tailor, was admitted into VI ward, bed 12, on September 2nd, 1890, for Bronchitis and Emphysema. In June, 1891, he was in fairly good health, getting up daily. He had an enlarged prostate, but the urine was normal in all respects. On *June* 7*th* some redness was noted on the outer side of the left fore-arm, and the surface was scaly; three days later the eruption became papular, and the upper arm was similarly affected. The eruption spread, and on the 17*th* the following note was made:—"Exudation at flexure of l. elbow; the l. arm swollen, and red where it is affected by eruption; desquamation furfuraceous. Some eruption across backs of shoulders; none elsewhere. Head scurfy." *After lasting three weeks, the eruption gradually faded* never having spread beyond the above area. *July* 28*th*.—A severe attack of bronchitis supervened; patient became very cyanosed, had dropsy, and a faint trace of albumen in the urine.

The eruption had never quite disappeared, and on *October* 13*th* he had a relapse; fresh patches appeared on the back and thighs, papular at first, and then desquamating. *Hitherto it had been localized to one side, but now, as it spread, it involved both sides symmetrically.* A week or two later the skin recovered its normal condition. The dermatitis was never very severe, and never became quite general. The albuminuria and constitutional symptoms were probably due to the severe attack of bronchitis. He was treated in the first attack, which lasted three weeks, with zinc ointment; the second attack, with ung. creol., and it appeared to *get rapidly well under this.* In December the patient had another severe attack of bronchitis, and died. After death, advanced cardio-vascular changes were discovered, but *the kidneys were healthy, except for congestion.*

Case M. VIII.—Thomas S——, æt. 72, was admitted into VI ward, bed 23

June 24th, 1890, for Stricture of the Urethra and Acute Cystitis. He had previously suffered from gout on several occasions, and had also had attacks of gouty eczema of the legs, with one of which he was admitted. It was not until a year after admission that he, being at that time fairly free from the troubles just mentioned, and being up and about, was attacked with the epidemic malady. He had, it is true, never been entirely free from a slightly eczematous condition of the legs, and this became worse in the early part of July, when the epidemic was prevalent.

On *July 13th* it was noted that the eruption had spread, by continuity, to the body, scrotum, and arms. It came out in these places as a papular rash, with a moderate amount of thickening of the skin, and some exudation. There was a good deal of irritation and desquamation. In the early part of *August* the eruption was noted as gone, only staining remained, but the weakness from which he had suffered all along increased, and he had attacks of giddiness, albeit in bed. During his illness he had felt sick, and occasionally vomited. *September 8th.*—"Staining still present on legs, but no eruption elsewhere. Exfoliation of feet. Weakness profound—reels—feels 'sinking through the bed.' Pulse extremely weak. No vomiting since last week. Appetite completely absent. No diarrhœa." The urine had from time to time contained a cloud of albumen; possibly coming from the bladder, for it often contained pus. *September 16th.*—"Diarrhœa has come on last few days, and patient profoundly weak, though the eruption has gone. Was in his usual condition yesterday, and died somewhat suddenly this morning, without previous change or warning." The temperature was usually subnormal throughout the skin disease. Once or twice it was 99·4°. Duration was eight weeks. *Treatment.*—Calamine and zinc ointment; Calamine lotion—the former being more efficacious. No internal treatment directed to the rash. Towards the end of life he was strange in his manner at night.

Autopsy eight hours after death. Early granular kidney. Cardiac hypertrophy. Atheroma of coronary arteries. The muscular substance of the heart was somewhat friable, and the *calcareous change in the coronary arteries probably caused the sudden death.*

It is worthy of note that the rash had cleared up some fourteen days before death. *This patient had frequently suffered from ordinary local eczema without serious inconvenience; but the epidemic dermatitis proved fatal by its constitutional disturbance, which was considerable, though the eruption was moderate. This is one of the few cases where the eruption started from a patch of chronic eczema.*

Case M. IX.—Jesse T——, æt. 49, was admitted into V ward, bed 19, on April 22nd, 1890, with Charcot's joint disease. He had enlargement of the left knee-joint, crises gastriques, and doubtful pupillary signs. He was in his usual health in *June*, when a dry eczematous rash was noted (29th) on his face, which rapidly spread to the neck, back, arms, and hands; in places it was blotchy, and in places papular. During *July* the rash was never very extensive, and seemed as though it would get better; but at the beginning of *August* it took on fresh activity. *August 11th.*—"Feet, legs, and thighs considerably swollen, pit deeply, covered irregularly with desquamating red patches. Eruption universal; scales small and thin; back similarly affected, except central part, which is free. *A good many round patches fading in centre and spreading at margins* on sides and shoulders. Front of trunk furfuraceous, redness having faded; very little exuda-

tion, except at flexures. Skin of arms a good deal thickened, and especially over hands; here and there a good many deep fissures. Face almost recovered. Vomits occasionally, but less during last month than before. Appetite poor, prostration considerable. *August* 18*th*.—"Relapse on face. On legs rash is not vesicular, nor papular, but *consists of reddened patches with well-defined raised margins of a serpiginous character*." In the latter part of the case the patient had three attacks of dyspnœa, lasting ten to twenty minutes, the cause of which was not obvious. Towards the middle or end of *September* the rash faded, having lasted about ten weeks, leaving otorrhœa, pigmentation, and a good deal of irritation of the skin. Finally he recovered.

The temperature in this case was interesting. Generally subnormal in the morning, and about 99° in the evening, with one rise to 102° (August 10th). But during the latter part of the case, and for a long time afterwards, the temperature was subnormal, both morning and evening, often as low as 96°.

Case M. X.—William H——, æt 75, was admitted into V ward, bed 12, on April 18th, 1890, on account of senile Cardio-Vascular Disease, which was attended by attacks of giddiness, irregularity of pulse, feebleness of health, and other symptoms referable to that disorder. He used to get up of a day, although he suffered a good deal from headache and vertigo. On the 16*th June*, 1891, the urine was noted as acid clear, sp. gr. 1012, and, for the first time, a very faint trace of albumen was found. On the 23*rd June* it was noted that he *had become weaker of late, and that he took food badly* (the diet at the time was beef-tea); and on *June* 25*th* there was noticed for the first time a slight eruption "like dry squamous eczema," very little reddened, on the arm, face, and still less on the legs and back. This remained, with no noticeable change, for some time. During *July* the eruption became worse, more crimson, the papules being headed with little flakes, covering the whole surface of the back, abdomen, chest and arms. The face meanwhile, which had been first attacked, got a little better. But the hair had been considerably thinned; the eyes were the seat of conjunctivitis, and wherever the eruption had been, *deep pigmentation remained.* The weakness had been extreme; there had been vomiting and diarrhœa; the tongue, at first furred, had become red, dry, and cracked; and the patient refused all food. The urine frequently contained albumen. In the first week of *August* he had a relapse. A few scattered patches, formed by the aggregation of small conical papules, came out on the face and legs, *stained with purpura, and each papule was crowned with a minute scale.* By *August* 15*th the eruption had almost gone*, only a little desquamation remaining, but the patient had become progressively weaker, the anorexia more and more marked, drowsiness supervened, and he died on *August* 28*th*.

Here, as in a few others, *there was a premonitory stage. The temperature was subnormal throughout*, except on three occasions, when it reached the normal line. *In this case the skin lesion was never quite general;* and the thickening and desquamation were only *moderate*, but the *constitutional symptoms were very severe*, and ultimately fatal. Towards the end *the lips and muscles were tremulous, and the respiration shallow and irregular.* The patient became restless at night, then drowsy, and died. The urine contained albumen throughout, sometimes in measurable quantities (August 21st $\frac{1}{8}$th). Duration of illness seven or eight weeks, though the rash did not last so long.

Autopsy, made seventy-two hours after death: Heart fatty and considerably

dilated; lungs fairly normal, excepting for some quiescent tubercular deposit at apices; liver somewhat cirrhosed; kidneys weighed three and a half ounces each, appeared healthy to the naked eye, excepting for congestion; brain natural.

Case M. XI.—George H——, æt. 71, was admitted into VIII ward, bed 19, on December 15th, 1890, with Cardio-Valvular Disease. Murmurs referable to both orifices. Urine acid, sp. gr. 1014—faint cloud of albumen. There was also some œdema of the ankles when he got up.

At the beginning of *June*, 1891, he had much improved, and was in fairly good health. *On June 20th he vomited after breakfast*, complained of loss of appetite and malaise during the succeeding days. About ten days later a slightly eddened squamous condition was observed, on the back at first, then on the chest and limbs. This rapidly increased, and the inflammation became more severe. *July 9th.*—"Patient not so well lately,—sleeps through the greater part of the day; left hand and right arm twitch in sleep." *July 11th.*—"General redness and desquamation in moderate-sized scales on the limbs and upper half of body. Skin over lower half of body is now deep red, evenly raised and furfuraceous, with outlying, rounded, raised blotches; the margins of all the raised parts being well defined." *July 12th.*—"Dermal inflammation appears to be subsiding, and the surface scaling more freely." *July 13th.*—"Diarrhœa six times in twenty-four hours. Patient worse this morning; sleeping heavily; almost unconscious; difficult to rouse. Twitches the right arm and head now and then. Heart's action rapid, irregular, and feeble. Mucous râles in chest. Died this evening." Temperature slightly elevated all the time. Average about 98·4° in the morning, and 99° in the evening. *Treatment.*—Unimportant and unavailing.

The dermatitis in this case was erythematous at the onset, and dry throughout. The anorexia and asthenia were pronounced; he had both vomiting and diarrhœa severely. The tongue rapidly became denuded. *The case was marked by great prostration. The duration (two weeks) was briefer than in any other case, excepting M. XV. There were distinct premonitory symptoms referable to the alimentary system. This was followed ten days later by a sudden symmetrical outburst of the eruption, which then ran a rapid and fatal course.* Even here the temperature was very little elevated. It seemed as though *the poison was introduced into the system by means of the alimentary canal, for during the ten days' preliminary stage, when, in other cases, the eruption is asymmetrical and fades away, this patient had vomiting and loss of appetite.* Unfortunately in my absence an autopsy was not made.

Case M. XII.—Thomas R——, æt. 53, was admitted to V ward, bed 29, on March 19th, 1890, for an attack of acute gout. After a time he got well of this, but remained under treatment for syphilitic glossitis. Nevertheless, he was up and about, in very fair health. He had his first attack of ordinary Eczema while in the infirmary, in March, 1891, on back of neck, right forearm, and left leg. This was noted as well in April, 1891. On *June 2nd* he had *an attack somewhat resembling influenza*, "had aching pains about him, shivered between midnight and 4 A.M. Temperature at 7.30, 103·4°; pulse, 112°. *June 3rd.*—Still complains of pains all over. No physical signs. Slight coryza, which he has had for some days." He had had similar attacks of unexplained pyrexia on several previous occasions while under observation, the temperature going up to

104°. He was well in a day or two, and it was not till a month later (*July 3rd*) that the epidemic eruption started simultaneously on his hand, arm, and legs (places formerly affected with ordinary gouty eczema). Without becoming quite general, the rash almost died away in two to three weeks; but then it took a fresh start, became general, though always most severe in the places first attacked, *attended by considerable thickening of skin*, profuse exudation, pain, irritation, *albuminuria, anorexia, and with so much weakness* that he took to bed. Later on, *purpuric spots* appeared on the legs. This severe attack lasted altogether about eight weeks (August 3rd to October 5th); and then both the epidemic malady and the antecedent gouty eczema disappeared together, the entire skin becoming healthy. The temperature throughout the epidemic attack was normal or subnormal. It was *followed by pigmentation, splitting of nails, and loss of hair*. Some interesting diagrams were made of this case by Miss Annette Benson, showing the advancing border of the eruption as it spread by continuity to other parts. This is one of the few cases which *exhibited premonitory symptoms*, though it is not quite certain if they were definitely connected with the epidemic malady. They occurred a month before its advent; they resembled influenza, and the patient—a gouty one—had presented similar symptoms before. *The case well illustrated the preliminary, abortive, stage of the disease which was so common; and, more important still, it illustrated the marked difference between two diseases, occurring at different times in the same individual, viz., ordinary Gouty Eczema and the Epidemic Dermatitis.*

*Case M. XIII.—Joseph D—— is the case narrated at the commencement of the paper (p. 7, *ante*).

Case M. XIV.—Geo. H——, æt. 82, was admitted into VI ward, bed 18, on November 25th, 1890, with Bronchitis, dilated right heart, and double rupture. He had never had any skin affection before. He was a feeble old man, though up and about daily. On *July 4th* the eruption started with papules on the hands, arm and face, and rapidly spread to other parts. Nine days later it got a little better, but only to renew its attack with redoubled vigour. On the 30th day (*August 3rd*) "no part of the surface free from eruption. *Tongue also desquamating*, red, and raw. Conjunctivæ red; semipurulent discharge. Skin of face very tender." The dermal inflammation was very acute in this case; anorexia and prostration extreme. By 34th day albuminuria appeared, and the exudation which had formerly existed ceased. On 35th day a sketch was made of one leg, and the case was seen by Mr. Hutchinson, who said it was then like typical pityriasis rubra. *August 13th* (40th day):—"Has been very low all day. Sordes on lips and tongue; hands twitch constantly; breathing rapid; skin feels hot; has double incontinence; exhales a bad odour. *Temperature, which has all along been normal or subnormal, has been gradually going up to* 101·4°." Next day he died, six weeks from the commencement of the disease. At the autopsy, made thirty-six hours after death, the heart wall was found to be degenerated, but the other organs were remarkably healthy for his age. The kidneys weighed each three ounces and, beyond intense congestion, were normal. *The case was a very severe one, and death took place by asthenia. This was the only fatal case in which the temperature went up before death. In the others the fatal termination was heralded by a subnormal temperature for several days.*

Case M. XV.—Joseph P——, æt. 70, was admitted to VIII ward, bed 12, on May 2nd, 1890, for Left Hemiplegia, Cerebral Softening, and Granular Kidney. He was very feeble, both of mind and body, keeping always to his bed. The spark of life was not very bright, and needed but little to extinguish it. This little occurred on *July 4th*, 1891, in the shape of an attack of the dermatitis, which started as an erythemato-squamous rash on the arms, trunk, and leg. There was no exudation, and only slight desquamation. The temperature was not elevated. *The eruption was comparatively trivial, and never became quite general*, but *the weakness was great, and he died, rather suddenly, within a week of the commencement.*

The autopsy, made fifteen hours after death, revealed atheroma of the cerebral arteries, "hypermyotrophy" of the systemic arteries, degenerate heart wall, localized intra-cerebral softenings, localized frontal pacchymeningitis, and granular kidneys (2nd stage).

Case M. XVII.—Henry B——, æt. 71, in whom there seemed to be *a period of incubation*, for he was attacked with vomiting and pyrexia (103°) on June 25th, and the rash did not appear till thirteen days later. It ran its usual course, became complicated with bronchitis, from which he died on the 51st day.

Case M. XVIII.—William B——, æt. 25, was admitted to V ward, bed 15, May 2nd, 1891, for Paraplegia, probably of syphilitic origin, attended by double incontinence and cystitis. These confined him to bed. He had never had any skin disease before. *The eruption in this case was slight*, of short duration, and never quite general. It began (*July 8th*) as scurfy raised patches of erythema on the arm, ears and forehead. The erythema desquamated, and then subsided at the end of ten days. The only other symptoms were *dryness of the throat, and thirst.* The eruption had disappeared when the patient took his discharge on *July 27th.*

Case M. XIX.—Charles G——, æt. 70, was admitted to VI ward, bed 13, May 20th, 1891, for Senile Cardio-Vascular changes and incipient Paralysis Agitans. He had never had skin disease or gout. The patient was up all day.

In this case also, *although three times the age of the last patient, the eruption was slight.* It began (*July 10th*) as an erythemato-papular rash on the face, which became scurfy, spread to the arms, and lasted for a week or two. By *August 19th* the face was well, but a few scattered papules and desquamating reddened patches appeared on the thighs and legs. *As the legs got better, the trunk and arms were again attacked*, but the whole skin was well by September. Constitutional symptoms slight. Followed by two slight relapses in October and November. Temperature always normal. Treatment: zinc ointment relieved the irritation. *Rapid improvement of each relapse under lot. creolin.*

Case M. XX. (*A man in perfect health, attacked four days after admission.*)—Edward C——, æt. 33, was admitted to V ward, bed 21, on July 8th, 1891, for severe scalp wound. *Had never had skin disease before.* A slight erythematous desquamating rash first appeared on the face (*July 12th*), *not near the wound*, and spread to the arms. There were moderate irritation, little exudation, fine branny desquamation, very little constitutional disturbance. The rash never became general, and the patient was well at the time of his discharge, two weeks later (July 27th).

Case M. XXI.—Edward K——, æt. 40, was admitted to VII ward, bed 29, on November 26th, 1889, for Paraplegia, due we thought to gumma of the theca vertebralis, which confined him to bed. He had never had any skin disease before. *This case was characterized by its moderate severity and protracted course.* It began (*July* 12*th*) as an "eczematous" rash in the flexures of the elbow, which spread up the arm to the chest, face, and ears. As these *got better*, *fresh patches appeared* on the feet and below the knees. The rash reached its maximum in two weeks, and then began to fade. But for a long time different localities took on fresh action. All parts of the body were at one time or another attacked. *August* 7*th*, "legs and feet covered with thickly-set *purpuric spots*, which soon faded," Slight diarrhœa occasionally; marked anorexia; slight prostration. Irritation considerable. Temperature normal. The disease lasted about seven weeks, *July* 12*th* to *September* 4*th*, and *was followed by loss of hair*, *severe muco-purulent conjunctivitis*, *and persistent relapsing exudative dermatitis* (*recurrent eczema*) *of the face and head*, which continued to the end of December (four months). Treatment: *under lot. creolin the eruption improved everywhere*, excepting the face, to which ung. cal. $\bar{c}$ zinc was applied without effect.

*Case M. XXII.—James C——, æt. 62, was admitted to V ward, bed 24, on September 2nd, 1890, for a poisoned hand, followed by cellulitis of the *left* arm, and chronic pyæmia. He had never had gout, rheumatism, or skin disease before. At the time of the outbreak, the left arm was being treated by massage to restore its functions, but the disease *began on the other arm* (*r.*) as a profusely exuding papulo-vesicular rash on *July* 3*rd*. The left arm was attacked a few days later; and the rash afterwards spread by continuity to the neck, trunk, thighs, face, and became general. *The exudation in this case was so profuse that the body and bed-linen were soaked.* The skin was considerably thickened, and the face so swollen as to prevent recognition. As the rash attacked fresh parts, it *spread with a well-marked raised margin*, with outlying papules and vesicles beyond. Coloured sketches were made on successive days, August 11th, 14th, and 17th, showing these features, and the formation of flakes. Anorexia and asthenia were present throughout. No diarrhœa, vomiting, or albuminuria. The primary attack lasted six weeks (*July* 3*rd* to *August* 14*th*). *It was followed by no fewer than ten recrudescences*, some local, some general, viz., on August 15th, August 17th, August 31st, September 3rd, September 7th, September 21st, October 8th, October 15th, November 4th, and December 8th. Successive layers of epidermis were thrown off on each of these occasions, and the skin finally presented a brownish parchment-like appearance, which continued to flake or scale in *curiously definite curved lines* running transversely on the arms, and more or less vertically on the trunk. At different times there were muco-purulent conjunctivitis and otorrhœa; and the attack was followed by complete loss of hair and shedding of nails. Finally, the patient *recovered*, *in consequence no doubt of the moderate severity of the constitutional disturbance*, and the absence of albuminuria.

The temperature chart deserves inspection. In the first two weeks of the disease the temperature was subnormal; in the third it reached 100·4° on two occasions; in the fourth it reached 100·2° on two occasions, and once each 101·2°, 104°, and 103°; in the fifth week it remained normal; sixth week, average 100° at night; seventh week, normal; eighth and ninth week, occasional elevations; tenth and eleventh week, average normal; twelfth and onwards, subnormal in the

morning, normal at night. The whole attack lasted nearly twenty weeks (July 3rd to December 12th).

Here, as in several other surgical cases, the eruption did not begin around the wound, nor on the arm that was being rubbed, but on the opposite one. *The eruption was asymmetrical at first, but became symmetrical afterwards.*

Case M. XXIII.—James L——, æt. 77—a patient in for Senile Cardio-Vascular changes, *suffered from a very severe attack* of the eruption, accompanied by vomiting, albuminuria, collapse, and double incontinence. Nevertheless he *ultimately recovered.*

*Case M. XXV.—George C——, æt. 49 (phototype 7), was admitted on June 25th, 1891, to V ward, bed 6, for synovitis of the right knee. *In other respects he was in excellent health*, and beyond the fact that he had drunk beer rather to excess, and had had what he called "erysipelas" of the left calf some three years before, his previous history had been healthy. By rest, the synovitis greatly improved, and he was commencing to get up. But on *July 22nd* (*four weeks after admission*) the eruption started on the right cheek and forehead. This faded a little, but on *August 1st* scattered papules appeared in a fresh place, *and now symmetrically*, on the fronts of the thighs, and on the *2nd* on the backs of the forearms. The papules became confluent, forming hard congested skin, and the rash gradually spread until by the 25th day it had become general. There were considerable loss of appetite and malaise. Tongue, at first coated, soon became denuded and raw. Infiltration of skin considerable. Eruption at first dry, but the later crops were vesicular, and in some places pustular. Severe muco-purulent conjunctivitis. *Sept. 1st* (40th day of disease), arms, face and left leg a good deal swollen. Purpuric patches front of left leg. *Sept. 4th*, "swelling subsiding, skin burnished red.† Prostration profound. Twitchings of muscles. Conscious, but drowsy and stupid. Had three attacks of shivering to-day, not attended with pyrexia. Has vomited occasionally lately. Bowels confined. Tongue raw, red and tender. No albuminuria." Diarrhœa and albuminuria subsequently came on; and patient got gradually worse. *Sept. 11th* (46th day), weakness extreme. Seems to be unable to swallow. Temperature very low. Skin flaking in large pieces. *Sept. 14th*, restless, trying to get out of bed. Half conscious. Can scarcely be roused: will not take anything: sordes. Occasional starts and tremors. *Very offensive smell from patient.*" No change till death on the 16th. The temperature during the first four weeks of the disease was normal or subnormal; in the 5th it rose gradually to 101°, and, after three days' intermissions, fell to normal; in the 7th week it again rose gradually, this time to 103°; it then fell continuously to 96°, and remained oscillating between 96·2° and 97·4° for six days before death. *Treatment.*—At first zinc and starch powder was used, then calamine lot., and lastly creolin lot. The latter seemed to do some good, but it was applied too late to check the disease. He rallied considerably under large doses of stimulants and nutritive enemata, but the effects were not permanent.

Autopsy, twenty-four hours after death. Skin scaling all over. Some pigmentation of arms and legs. Pleuræ, Peritoneum, Pericardium, and Heart (13 ozs.) normal. Lungs (right 21 ozs., left 20 ozs.) congested at bases. Liver (64 ozs.) normal. *Spleen* (*9 ozs.*) *unduly large*, not diffluent. Kidneys (right 5½ ozs., left

† A photo (phototype 7) was taken of him to-day, six and a-half weeks from commencement.

6 ozs.) congested, and capsules a little thickened, but strip easily; otherwise natural. *Stomach, petechial ecchymoses; excess of mucus;* no ulceration. *Intestines unduly congested, specially first part of duodenum, no actual breach of surface, but looks like first stage of ulceration. Large excess of mucus.* Mesenteric glands not enlarged. Brain (47 ozs.), meninges opaque and adherent, no other abnormality. Right knee, signs of chronic arthritis.

Here was another man in the prime of manhood, admitted for an unimportant local malady, who, four weeks after admission, contracted the disease, and after a brave fight for fifty-one days, succumbed. This is totally unlike any known form of eczema.

Case M. XXVI.—William M——, æt. 42, was admitted to VII ward, bed 25, on April 28th, 1891, for ulcer of leg. The eruption started (*July* 22*nd*) *not on the leg*, but on his ear and cheek. It was quite dry, very trivial, and died *away in the course of a week;* but on *August* 1*st* fresh papules appeared on both arms (*symmetrically and simultaneously this time*); then the face again took on fresh action, but the eruption never spread beyond these areæ. *August* 7*th* (16th day).—"The rash is dry and formed of *papules, which are mostly headed by fine scales.* At the flexures raised patches have been formed, which are desquamating. Whole of face and ears are reddened and furfuraceous, scales rather thicker than elsewhere. Ears were discharging up to four days ago; no other part wet." There was no elevation of temperature, nor other marked constitutional signs, and he was discharged well on August 19th, *having been ill for four weeks.*

Case M. XXVII.—George G——, æt. 72, was admitted to VI ward, bed 16, on November 16th, 1890, for Paraplegia of long duration, which had confined him to bed for twenty years. He was very sadly in May and June, 1891, being troubled from time to time with diarrhœa, vomiting, feelings of faintness, occasional attacks of Cheyne-Stokes respiration, and a trace of albumen in the urine. He was getting much better, when, during the first week in *July*, "dry scaly patches" were noticed on the elbow. This eruption was very trivial and almost escaped notice, till three weeks later (23rd) *flat, pale, pinkish papules appeared*, scattered all over the trunk, "*blended in places into rounded patches* (*resembling erythema papulatum*): *some fading in the centre, while raised at the edge;* none on face or limbs. Head very scurfy; the eczematous rash on the elbows is more reddened, and there are *outlying papules around.* Examined by lens, the flat papules on trunk seem to be covered by tiny vesicles." Patient so weak that he cannot sit up. The flat papules became confluent, and in the course of the next week or two the eruption spread to the whole body, excepting the face.

August 15*th*.—Purpura appeared on the hands and legs, and on *August* 21*st* the diarrhœa, from which he had not suffered since the rash came out, returned for a few days. The patient got *weaker and weaker, fainting on several occasions*, and finally drowsy. But the albuminuria which had existed before the outbreak now disappeared, and the urine was of good specific gravity. In the latter part of August *bed-sores rapidly formed in many places* (eleven at one time). About *August* 29*th a parotid bubo formed*, and the patient died on September 2nd, apparently of asthenia, five-and-a-half weeks after the real commencement of the epidemic malady. The temperature remained about normal until the parotid bubo formed, and then rose. There were never any rigors or sweating. The

necropsy, made thirty-six hours after death, revealed adherent pericardium (which accounted for the sudden death), old quiescent tubercle of the lungs, spleen, and heart. The kidneys were congested, but these and the other organs (excepting the spinal cord) were normal. The intestines, unfortunately, were not examined.

Case M. XXIX.—William C——, æt. 61, was admitted to VII ward, bed 5, on February 11th, 1891, for Gouty Arthritis, chiefly in right elbow, both legs and feet, and peripheral neuritis, which he had on and off for eight years, and which confined him to bed. About *July 26th* the rash appeared as a "redness and slight scaliness behind ear and right side of neck; some infiltration of skin; also a very few papules on back of left forearm." By *August 7th* the latter had quite disappeared, and the former subsided. The rash had quite gone by *August 28th*, but on *October 2nd* a relapse occurred, severe, *though this time symmetrical*, and always limited to the neck, face and head. *October 21st.*—"Eyelids swollen and red; conjunctivæ intensely congested; some phlyctenules beginning. Centre of face free. Patient says, 'Pain is awful.'" This second attack subsided about the middle of November. There was neither albuminuria nor marked constitutional signs. *The early application of lot. creolin seemed to have a very good effect in this case.*

It is worthy of remark that although this patient was intensely gouty, and advanced in years, the attack was only a moderate one. And further, the only parts attacked were those constantly exposed to the air. His right arm was immovable, always covered up, and therefore escaped, but his left arm was free, and this and his neck were attacked by the rash.

Case M. XXX.—Charles K——, æt. 67, was admitted to VII ward, bed 31, on December 20th, 1890, for necrosis of bones of right foot, which was subsequently amputated. The amputation wound was slow to heal, and he was troubled in May, 1891, with an eczematous condition of the right leg just above the stump. *However, the epidemic eruption did not start here, but on the hand*, as a papulo-erythema; and rapidly, in the course of three days, *attacked other parts of the body in successive isolated centres.* Thus on *July 29th*, from a valuable diagram made by Miss Benson, we learn that the rash existed in twelve separate places on different parts of the trunk and limbs. These appeared as papular, desquamating patches, with little or no exudation. These patches never became confluent, so that the rash was never quite general, and it had faded by *September 10th* (six-and-a-half weeks).

*Case M. XXXI.—John J——, æt. 40, was admitted to VII ward, bed 22, on July 21st, 1891, for stricture urethræ, for which he had been several times previously under treatment. His stricture easily allowed a No. 4 to pass even when he came in, and was really a very trivial affair. He had never had any affection of the skin in his life; and he was in other respects *in perfect health. But two days after coming into the infirmary*, into a ward where there were several cases of the epidemic malady, he developed a papular scurfy eruption on his forehead and face; then, a few days later, on the backs of both hands. *August 7th* (11th day).—"Eruption on hands and arms, *very like urticaria;* smaller papules blend into larger ones. *It comes and goes.* The rash subsequently spread to back and legs, and then, in the latter part of August, improved." *September 2nd.*—"Yesterday face again became affected, now red, thickened, and scurfy. Moisture

at sides of nose and behind ears." *September 11th.*—"Feels weak and ill. Rash spread to chest, which has hitherto been the only part free. *Eruption now general after six-and-a-half weeks' course.*" *September 14th.*—"Distinct turn for the better. Swelling gone down, arms almost natural colour. Much exudation from back of neck." *September 16th.*—"Legs have been covered with a crop of vesicles for several days; to-day feet swollen. There has been more exudation from neck than elsewhere from the first. *Complains of cramps and shooting pains in the hands, feet, and legs. Urine normal. Irritation great. Sleepless.*" *September 24th.*—"Still cannot sleep." *October 2nd.*—"Skin improving; but *nervous irritability great. Cannot sleep. Starts at every slight sound; seems hyperæsthetic. Complains that both hands feel numb, and half powerless; cannot fully flex or extend fingers:* feet natural. Pulse low tension, regular, rather frequent. Urine, acid, 1009, pale, no albumen. No vomiting; no diarrhœa." *October 15th.*—"Skin drying up. Has abscess in left axilla." The skin was still rather red and shedding its epidermis, though the patient was better in himself when he took his discharge on *October 23rd.* Creolin ointment was applied, but too late in the case to be of much use. Sulphur ointment seemed to do some good. The attack was followed by considerable loss of hair.

The eruption in this case was severe and *relapsed in one part before another part was well.* The primary attack may be said to have lasted five or six weeks, but the face, after getting almost well, relapsed before the legs had recovered from the first attack. But a more important feature in the case is the fact that *a strong healthy man should contract the disease two days after admission for a trivial condition. The unusual amount of nervous irritability is also a noteworthy fact.*

Case XXXV.—William U——, æt. 55, admitted on November 17th, 1890, to VI ward, bed 19, for Chronic Bronchitis and Dilated Heart. There was a history of former eczema on the legs. Albumen was present in the urine on admission and never disappeared. The eruption was *heralded in July by diarrhœa* extending over some weeks, and *latterly vomiting.* It began, *July 26th*, with papules on the arms, and rapidly became general. The diarrhœa and vomiting stopped as soon as the rash was fully established. It ran the usual course and terminated after nine-and-a-half weeks on *October 9th.* But it relapsed *November 2nd.*—"More papules over back and abdomen. Skin very hyperæmic and thickened. Some exudation over abdomen. Dried exudation over buttock. Scalp still crusted." *November 4th.*—A little muco-pus discharged from eyes. Evening temperature 100°. Pulse 120°. Breathing laboured. Bronchitis." *November 14th.*—"Skin almost well. This morning *grasp of left hand very weak. Can only just raise left arm:* left leg natural. No left facial paresis. The weakness of the left hand and arm continued until the end of November. The bronchitis and albuminuria and cyanosis increased, and the patient died December 26th of the pulmonary complication." Temperature all along was normal, excepting once, as noted. Otorrhœa, enlarged inguinal glands, marked pigmentation and loss of hair followed the rash. Necropsy six hours after death revealed extensive bronchitis and emphysema. Kidneys (right 5 ozs., left 5½ ozs.) intensely congested, but otherwise normal. Heart dilated and degenerated. All the organs were congested.

The course of this case, like M. XI., *was very suggestive of the poison being introduced through the alimentary canal. The weakness of the left hand and arm was a curious and unexplained complication.*

Case M. XXXVI.—William M——, æt. 63, admitted to V ward, bed No. 11, on January 28th, 1890, on aeeount of Granular Kidney, Hemiplegia with Aphasia, and persistent Cephalalgia. These ailments confined him to bed. The points of interest in his ease were, *thc ringed characlcr of eruption, thc markcd efficacy of germicides, and the fact of rccovcry in spitc of rcnal complication.* There was no previous history of skin disease. The eruption started on *July* 28*th*, 1891, as flat papules on the left forearm. Here it remained for some time. *August* 10*th*,—vesieular patehes on right thigh, and patehes soon appeared all over the body, raised, scaly, with scanty exudation. It subsided by *Scptcmbcr* 15*th*, but about *Octobcr* 1*st* he had a relapse, and this time, as the papules enlarged, they beeame *more distinctly ringed* than on the former oeeasion—" margin raised and redder than eentre, whieh is depressed and sealy " (note of Oetober 13th). The eruption this time was confined to the left arm. *October* 21*st*.—" Rings a little larger, more defined and raised, and scales a little thieker. Two fresh spots to-day." *October* 27*th*.—" *All the patches were steadily increasing, had increased to twicc the size. Carbolic lotion* (1 *in* 20) *applied for one day* (*Octobcr* 21*st*) *checked them. They are now rapidly fading under ung. sulph., which has been applied sincc October* 22*nd*." In November he had a second relapse with the same kind of ringed patehes, *and the same treatment was again efficacious. The eruption all along was worse on the healthy than on the paralyzed side.*

Case M. XXXVII.—Thomas C——, æt. 58, was admitted to VII ward, bed 20, on January 26th, 1891, with Uleer of the leg. The eruption, however, did *not begin around the ulcer, but symmetrically on both knees* (*August* 1*st*). It afterwards affected the legs, feet, arms, hands and faee, but was never quite general. There was intense loeal irritation, but the eonstitutional symptoms were moderate. There were several relapses, and the eruption was *succeeded by marked pigmentation, glandular abscesses and boils.*

Case M. XXXVIII.—John P——, æt. 65, was admitted to VI ward, bed 1, on December 2nd, 1889, on account of Rheumatoid Arthritis of both hips and knees. In other respeets he was in very good health, and he was up and about all day. The viseera were noted as normal, and this was confirmed at the autopsy. This patient, like ease M. XXVII., was *troubled with vomiting and diarrhœa for some time* (June 9th to August 4th), *before the appearance of the eruption.* The urine was normal. The eruption appeared on *August* 4*th* on the hands, and three days later on the neck and legs; in the latter position *accompanied by purpura.* It rapidly spread to the scalp and other parts, and on *August* 12*th*, only one week after eommeneement, the hair was being rapidly shed.

The rash never became quite general, and the dermatitis was moderate, compared with other cases, and rapidly subsided; neverthelcss the asthenia and anorexia were very severe. The vomiting subsided a little, and the diarrhœa eeased after the rash had eome out.

Four weeks from the eommeneement it was noted (*September* 4*th*), "patient extremely weak, both in body and mind; *wanders a little.* Incontinenee of urine and æees. Vomits occasionally. *Weakness out of proportion to rash*, whieh was never very extensive, and of whieh there are only slight remnants, in the shape of scurfiness on feet now. *Has lost all his hair. Has nasty sour smell like othcr patients, though no rash now.*" Two days later he died of the asthenia.

The urine was normal, and the temperature subnormal throughout—96·8° on the morning before death.

Necropsy, made twelve hours after death, by my colleagues in my absence, revealed a healthy condition of all organs and tissues, excepting the joints. *The stomach contained excess of mucus and patches of congestion.*

The intestines appeared normal, but, unfortunately, were not opened.

This patient was in perfect health for his years, in spite of his joint condition, at the time of the onset of the dermatitis, and he came of a healthy, long-lived stock. *This case, like M. XI., XXXV., and others, was suggestive of the introduction of the poison by way of the alimentary canal. Another interesting feature was the total disproportion between the visible evidences of the skin lesion, and the severity of the constitutional symptoms.*

Case M. XLIII.—George R——, æt. 40, was admitted to V ward on July 22nd, 1891, on account of a severe injury to the face. In other respects he was *in very good health*, but there was a good deal of suppuration around the wound, and it was a long time healing. The eruption started (*August 6th*) two weeks after admission, *not around the wound*, but attacked the chest, and then the arms. It was described as *having the appearance of urticaria*, and soon faded away. *Four weeks later it reappeared*, and this time rapidly spread nearly over the whole body. It was quite dry and scaly in character, but there was *very little thickening of the skin.*

There were no constitutional symptoms, and the eruption only remained out three weeks. Then it disappeared, as it had come, suddenly. The rash in this case was widespread, but *comparatively trivial.* Nevertheless it was followed by *complete loss of hair.*

Here, moreover, is another example of a healthy man in the prime of life being attacked shortly (two weeks) after admission.

*Case LIV.—William S——, æt. 43, was admitted to VII ward for a painful Ulcer on the left leg. It dated from an injury fifteen years before. It was incurable and painful, therefore his left leg was removed below the knee on September 18th. He made a good recovery, and, though there was still a small sinus on the stump, he was getting up daily preparatory to leaving the infirmary, when he was attacked with the eruption. *It did not begin on the stump*, but "began with *irritation over the back* and loins on October 15th, *though nothing was then to be seen.* On the 16*th* papules came out over centre of back, and spread rapidly by continuity to the whole of the back and loins."† By the 19*th* it had spread to the neck, arms, and forearms. On the 22*nd it made a feint at fading;* vomiting now occurred and the appetite was quite lost. The vomiting continued intermittently throughout, and the rash, with fresh vigour, spread and became general. It was a papulo-erythematous rash, attended by considerable tumefaction and induration, by great burning and irritation, by the formation of vesicles in a few places, but in most going on without this to the exfoliation of the cuticle in large flakes. The swelling of the face was so great as to close the eyes, which were themselves severely inflamed and discharged an irritating fluid. The severe burning prevented sleep, and the patient was extremely weak and ill. The tongue at first coated, then became red and raw; the vomiting continued, but no diarrhœa.

† Represented in phototype 3.

By the 22*nd day* the patient commenced to rally, and except for a slight recrudescence on the face (*November* 8*th*) he made an uninterrupted recovery; this taking place in the same order as the parts had been attacked. It lasted about five weeks altogether. Towards the end *numerous boils formed, the nails became ridged and came off, and the hair everywhere was shed.* Once only was a haze of albumen noted. The temperature remained normal during the first six days, rose gradually for four days to 100·8°, and then fell gradually for six days to normal. After this it averaged 98·6° in the morning and 99·6° in the evening. This is a very typical example of an *acute* case of the affection, the only one which it has been thought necessary to publish, *occurring in a middle-aged healthy man. The definite course was here very marked, resembling a specific eruptive fever, only without much pyrexia. Cultivations from the patient's blood taken on the twenty-third day gave the characteristic diplococcus.*

Case M. LV.—William A——, æt. 68, was admitted to V ward on April 18th, 1890, for Cardiac Valvular disease, attended by anginoid attacks. There was no history of gout or previous skin disease. He was in fair general health when first attacked by the eruption on *July* 2*nd*. It began on palms of hands, remained for a few days, and then subsided. Five weeks later (*August* 8*th*), *took on fresh action*, spread to the arms; and in a few days attacked the forehead and the rest of the body and limbs. It was described as quite dry and consisting of "sago-grain" papules topped with scales. On the legs it had a *purpuric character. August* 25*th*.—"*In several parts about the trunk there are concentric rings. In centre a flat papule, outside this a white zone, and outside all a raised ring of congested skin; suggestive of erythema iris.*" There was not much induration of skin excepting of the face, elbows and hands. It subsided about *September* 15*th*, after a duration of ten-and-a-half weeks, leaving considerable pigmentation, cracked parchment-like skin in many places, and *enlarged glands in groins and axillæ.* There had been some albuminuria and vomiting on one occasion (August 28th), but both the thickening of the skin and the constitutional symptoms were less than many of the cases. *The temperature was normal in the morning and about* 99° *in the evening, excepting between August* 27*th and September* 4*th, when it had an intermitting character, went up gradually to* 104°, *and was attended once with rigors.* During this time the rings were present on the body, the face was considerably swollen, and there was severe conjunctivitis. The disease was attended by the usual anorexia and asthenia, and was followed by loss of hair and nails; but the patient ultimately made a good recovery. *Germicides had a markedly good effect, though they were not applied early enough.*

My Own Case consisted simply of a dryness and scurfiness of the forehead, ears, and skin around, attended by a good deal of itching and thirst; lasting for a week or ten days in July. Both ears were attacked about the same time. The leading feature was the exfoliation of the skin of these parts. I have never before had the slightest affection of the skin.

Female Cases in the New Infirmary.

All the cases occurring in females were of a slighter character, and only three patients died as a direct consequence of the disease, against eighteen males who succumbed; a death-rate of four as compared with 20 per cent.

Case F. I.—Sophia W——, æt. 81, was admitted to III ward, bed 1, on June 30th, 1890, for Arterial Disease and a curious condition of Hemi-ataxy. She was getting up daily when, on *June 20th*, raised erythematous blotches were noticed on the right elbow, which became scaly, without exudation. Here the rash remained localized and gradually faded till only redness was left; but on the 9th of July it appeared on the face in a more severe form, soon after reappeared on the arms (*both together this time*), and gradually became general by spreading from place to place, from above downwards; the legs being last to be attacked and only slightly, The primary attack lasted nearly nine weeks (June 20th to August 20th). The rash was dry and exfoliative throughout, attended by great weakness and loss of appetite, by conjunctivitis, by slight albuminuria, occasional vomiting, diarrhœa, loss of hair, and slight elevation of temperature (to about 99°). It was followed by a slight relapse. The patient, however, *never rallied from the weakness;* pulmonary congestion supervened, and she died on October 4th. At the autopsy the arteries were much degenerated, but no morbid lesion of any organ was found to account for death.

Case F. II.—Jane R——, æt. 45, was admitted to III ward, bed 30, for Subacute Rheumatism. *The eruption* in this case, which began in the back, was *very trivial*, but about the same time the patient was troubled by *anorexia and vomiting*, extending over several weeks, and by *considerable weakness* for some time after, neither of which could be accounted for on any other supposition than that it was *connected with the epidemic malady.*

Case F. IV.—Eliza M——, æt. 66, was admitted to III. ward, bed 11, on April 27th, 1891, for incipient Chronic Bright's Disease. The urine was normal, and she had quite recovered on June 25th, when the eruption started behind the ears. Thence it spread down the back, attacked the elbows and inner sides of knees, but it never became quite general. Like many of the slighter cases, it lasted a long while—nine weeks. *The albuminuria returned during the attack*, but the patient ultimately made a good recovery.

*Case F. XIII.—Mary L——, æt. 32, was admitted to III ward, bed 14, on June 10th, 1890, for alcoholic Multiple Peripheral Neuritis. Some six or eight months after admission she had almost recovered from this complaint, but she developed a chronic form of phthisis, which confined her to bed. Meantime, the eruption appeared as raised, flat, isolated papules on dorsum of right foot, over both internal malleoli and on face, and by-and-by elsewhere, though *never becoming confluent or general.* As each papule enlarged, it *spread into a ring, and developed a purpuric basis.* The ring consisted of a raised, congested margin, and enclosed a depressed scaly area, hardly, if at all, moistened. It lasted a long time—three or four months—and did *not run so definite a course as the others;* each papule seeming to run *its own course.*

Any constitutional symptoms observed might have been due to the lung mischief. It is difficult to account for the *purpuric element in so young a subject;* but it is worth mentioning that she had been subject to hæmorrhages of various sorts before the lung mischief developed, and which were regarded at the time as instances of vicarious menstruation. *Ung. sulph., applied latterly to the patches, seemed to be very efficacious.*

*Case F. XXI.—Maria T——, æt. 68, the subject of our coloured illustration (frontispiece) and phototype 5, *naturally a thin woman*, was admitted to II ward on October 29th, 1890, for eczematous Ulcer of the left leg. The patient had formerly had eczema, and six years before an attack of "erysipelas" followed by "abscesses" and "loss of hair." The ulcer took nearly a year to heal, and it left a patch of chronic eczema on the left leg and thigh, which persisted to the time of the epidemic attack, *and then disappeared.*

On *August 6th* the epidemic malady started as a *clearly defined oval ring under the chin, perfectly clear in the centre, red and raised at the margin*, size of half-a-crown. This, after spreading a little, faded away in the course of a week. Then the eruption *broke out with redoubled vigour* on the forehead and spread rapidly. This time the eruption took the form of discrete papules, such as are seen on the chest in the coloured plate, and vesicles. The whole body was attacked, sooner or later, but the arms and face were always the worst, and here the thickening was very great† and the exudation considerable. *The face at one time was half again as big as natural.* The primary attack lasted six-and-a-half weeks, and was followed by a slight relapse. The temperature varied between 97° and 99°; once it reached 100°, when the swelling was at its height. The anorexia and asthenia were marked, at one time recovery being despaired of. There was some albuminuria, and the rash was followed by *general wasting*, alopecia, and leucoderma. *The initial patch beneath the chin is still marked by a white area, which contrasts strongly with the natural colour of the skin around.*

*Case F. XXVIII.—Emily O'G——, æt. 60, was admitted to II ward, bed 14, on May 13th, 1891, for aortic valvular disease. The rash first appeared on August 10th, on the back of the right hand, as two flat papules, which *enlarged into erythematous rings* surrounding a depressed area covered with tiny vesicles barely visible to the naked eye. It was spreading rapidly, but *the prompt application of half per cent. creolin lotion effectually checked it, and resulted in a rapid cure*, Three weeks later patches appeared (*this time symmetrically*) on the forehead. knees, ankles,‡ and elsewhere, each surrounded by discrete papules, and at first it was thought that the eruption would get the mastery in spite of the application of the creolin lotion; but *perseverance and a slight increase of strength in this solution was successful* in curing the disease without its becoming general, and without any severe constitutional symptoms.

Seventy-three cases (thirty-two males and forty-one females) occurred in the

Sick-Wards of the Workhouse,

but sufficiently detailed notes could not be kept of these to form a consecutive history.

† Represented in phototype ‡ Represented in phototype 4.

II.—Cases at Marylebone Infirmary.*

(*Which is situated about one mile from Paddington in the Western District.*)

By the courtesy of Mr. J. R. Lunn, I was enabled to see these on several occasions, and they all bore a marked general resemblance to my own cases. The Infirmary is considerably bigger than the Paddington Infirmary, being certified to hold 776 as compared with 284 patients. In the autumn of 1891, 193 cases of the dermatitis occurred, and ten of these proved fatal,—*a death-rate of 5 per cent.* In addition to the inmates, *several of the officers, nurses and porters contracted a slight form of the disease*, but in them the constitutional symptoms were of a very trivial order. The duration of the disease seemed to be rather shorter than the Paddington cases, giving an average of six weeks, though many of the patients had successive attacks, or, at any rate, relapses.

Some of the complications which followed were of rather a severe kind, such as meningitis, gangrene of the feet, &c. Mr. Lunn found that if *a patch of the disease, when it first appeared, was painted with collodion, the progress of the disease was stopped.* This may, perhaps, be regarded as another evidence of its contagious nature, and the fact that several of the staff contracted the disease, although quite healthy at the time, is evidence of the same nature.

III.—Cases at St. Mary's Hospital,†

Are referred to by Dr. Lees in a letter to the *Lancet*, August 22nd, 1891. Both Dr. Lees and Dr. Stephen Mackenzie are agreed that *whatever the disease is, it is not an eczema*, though it bears strong superficial resemblance to a severe case of that disease.

The malady attacked four patients who were in St. Mary's Hospital for some other disease.

The desquamation of the epidermis in large flakes was very profuse, "*reminding one of scarlatina.*" There was slight rise of temperature in two cases. In one, the eruption was fatal, but nothing pathognomonic was found after death beyond the skin lesion. It is a curious fact that St. Mary's Hospital is situated about the same distance from Paddington Infirmary in one direction as Marylebone Infirmary is in another; and in both, the outbreak was slighter than at *Paddington, which seems thus to have been the centre of the morbid influence.*

IV.—Case in the Female Lock Hospital.

A well-marked instance of the disease occurred in this institution, which adjoins the Paddington Infirmary, under the care of Mr. Ed. Milner.‡ The patient was a woman, æt. 44, the subject of necrosis and thickening of the calvarium. The eruption first appeared on the chest, on October 2nd, in the form of dusky red

* *Vide* Discussion at the Medical Society of London, *Lancet*, September 5th, 1891.

† I have since heard rumours of cases of this disease having occurred here in previous years.

‡ For the notes of this case I am indebted to Mr. P. J. Kingston, the Senior House Surgeon.

patches *with raised margins*, which gradually spread over the whole body; attended by profuse exfoliation, and profound prostration. The temperature was a little elevated (to 99°—100°) all the while. About November 3rd *she was noticed to have "very marked tremors, and hurried respiration"*; severe diarrhœa, and delirium supervened, and she died in a semicomatose condition on November 14th, six weeks from the commencement. At the autopsy incipient lardaceous changes were revealed, which accounted for the albuminuria and diarrhœa during life. *At the time when the jactitation and hurried respiration were noticed, the patient was improving in other respects; nevertheless the case ended fatally.*

V.—Cases at the Hanwell Asylum.

Female Department.

Dr. Richards, the Medical Superintendent, mentioned at the discussion which took place at the Medical Society, November 30th, 1891,* that he had observed cases of the disease among the patients in the females' building. He said that he might have overlooked some before his attention was directed to the matter by the correspondence in the Journals.† He had, however, collected some thirty-eight cases, which occurred in the autumn of the year 1891, out of about 1,140 inmates; or 3 per cent. Arranging the cases in decades, he found that five were between 30 and 40, six between 40 and 50, twelve between 50 and 60, eight between 60 and 70, and seven between 70 and 80.

Most of the cases broke out in September and October, but no fresh case occurred after the end of the latter month. The eruption started most frequently on the face, as a papular rash, which generally went on to the formation of vesicles, accompanied by thickening of the derma, terminating in profuse exfoliation, like pityriasis rubra. Other parts of the skin were also first affected, and especially the *back and loins, where it started almost as frequently as on the face.* The cases seemed to be somewhat less severe than those at Paddington, but in other respects they were precisely the same. None of them terminated fatally, nor was the disease followed by boils, pigmentation, or falling off of the nails. Treatment did not seem to have any effect on the course of the disease. Dr. Richards made careful investigation into the causation, and failed to attribute it to any article of food, nor could it possibly be the soap, nor the water, which was drawn from a deep artesian well. As to the pathology, he thought that *the nervous system played an important part, and he also thought that it was in some way connected with influenza,*‡ though there were no other manifestations of influenza in his patients at the time, excepting perhaps in one or two of the cases, where the patients had complained of pain in the back and limbs, before the rash appeared.

The outbreak of skin disease at Hanwell was *followed by an epidemic of diarrhœa*, without obvious cause.

In the autumn of the previous year, 1890, a somewhat similar epidemic of an eczematous affection had broken out among the patients at Hanwell; and at the same time, influenza was rife amongst them.

* *Lancet*, December 5th, 1891.

† *Ibid*, August 5th, 1891, *et seq.*

‡ This question is discussed in the *Journal* for February, p. 158.

VI.—Cases at the Lambeth Infirmary.

(*Which is situated in the South-Eastern District of London.*)

I am indebted to the kindness of Dr. Lloyd, the Medical Superintendent, for permission to see these cases, and to publish the following brief notes, which I took during my visit. I was informed that about twenty-five cases in all had occurred during the autumn of 1891, and a few similar cases had occurred in the autumn of 1890. Several of the patients had had very severe attacks, but only one of them had died.

Case I.—John L——, æt. 65, suffering from chronic rheumatism. He had had the eruption for the first time in the autumn of the previous year, and had got well; *the rash had come out again lately* about eight weeks before, first on the hands, and had spread all over the body. The skin had been very red, and finally large flakes had come off;—entire *casts of the fingers*. At the time of my visit the skin was deeply and uniformly pigmented all over the body.

Case II.—A man named S——, æt. 56, had had the eruption all over the body. The skin had been "a bright scarlet," and he had scaled all over. The constitutional symptoms had been rather severe in this case, and on one occasion the *temperature had gone up to* 104°; nevertheless, at the end of three weeks, he thought that he was sufficiently well, and took his own discharge.

Case III.—John H——, æt. 80, had been admitted originally for granular lids. The eruption had come out in May, first on his hands and arms, and had spread thence all over the body. There had been very severe itching. The rash first appeared as *red papules and flat blotches*, sometimes dying away, sometimes becoming confluent. At the time of my visit there was a good deal of pigmentation, dying away in places, but still mapping out the extent of the rash.

Case IV.—James B——, æt. 61, had been admitted into the infirmary twelve months before for gout. He had tophi in the ears. *He had been attacked last year with the same disease of the skin.* The rash first appeared at the bends of the elbows, and the whole body had gradually become of a bright crimson colour, with a considerable amount of swelling and induration. The epidermis in his case had come off by disquamation as tiny scales, rather than big flakes. The nurse, in giving particulars of this case, made a significant remark, "*We have had so many cases of this curious skin disease that I am apt to mix them up, and not to distinguish one from another.*"

Case V.—A man named K——, æt. 63. He had suffered from gout on former occasions, and came into the infirmary this time for pulmonary mischief. He had never had the eruption before. It had commenced four or five weeks before on the ears, and also about the same time on the right instep and the elbows, and had spread all over the body.

Case VI.—A man named O——, æt. 50, seemed to be an illustration of the epidemic skin disease, supervening on a chronic rupial condition. There were two fairly distinct forms of eruption on his body at the time of my visit. 1. Superficial rupial patches on the legs and arms, which he had had on and off for four or

five years. 2. A general crimson induration of the skin, which was continually shedding its epidermis in bran-like flakes. This had begun on the chest, and gradually spread all over his body. He had improved lately in both respects.

Case VII.—Nathaniel V——, æt. 50, had *been admitted for the skin disease.* He had *had the same disease four years ago*, which had quickly spread all over the body. At the time of my visit the entire skin was crimson and somewhat thickened. The head was covered with crusts and flakes, especially the scalp, and the arms and legs were covered with fine bran-like scales, the result of the disquamation which was continually going on. There had been few or no constitutional signs in this case.

Cases VIII. & IX.—I heard of two others, one exactly resembled the preceding; and the other (70 years of age) was said to have come out in a crimson rash all over the body; the skin had peeled off very profusely, and he died after being ill for a few weeks. He had never had it before.

It will be seen that these cases, like many of my own, involved all parts of the body; it was evidently a general rash, and, as in my cases, most of them were in the Infirmary for something else, and had evidently contracted the skin disease whilst there. Three of them differed from any of my cases in one very important particular, viz., *in having had a similar disease in previous years.* One of them had had the disease four years before, and two of them had had it the preceding year. All but one of the cases presented constitutional symptoms, chiefly prostration and loss of appetite; and one of the cases had been followed by boils. Two of them had been followed by marked pigmentation.

VII.—Sporadic Cases.

Several sporadic cases have come to my knowledge by the kindness of Doctors William Cock,* Evans, Nias, Gwynn, Turner, Harris, Forbes, Turnbull, Caiger, Pringle, Stephen Paget, Arthur Downes, and others, to whom my best thanks are due for the information they afforded me.

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